50 Year Design Storm

Project Description

File Name	HILLTOP 9-21-2026.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	33
Nodes	52
Junctions	13
Outfalls	9
Flow Diversions	0
Inlets	30
Storage Nodes	0
Links	67
Channels	22
Pipes	45
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	50 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-AD-49	4.59	0.7000	2.14	1.50	6.87	15.65	0 00:26:24
2	Sub-CB-10	0.54	0.7000	1.50	1.05	0.57	2.38	0 00:14:15
3	Sub-CB-11	0.44	0.7000	1.26	0.88	0.39	2.28	0 00:10:06
4	Sub-CB-12	0.70	0.7000	1.60	1.12	0.78	2.94	0 00:15:59
5	Sub-CB-13	0.37	0.7000	1.25	0.88	0.32	1.91	0 00:10:09
6	Sub-CB-14	0.87	0.7000	1.36	0.95	0.83	4.15	0 00:12:04
7	Sub-CB-15	1.24	0.7000	1.56	1.09	1.35	5.29	0 00:15:19
8	Sub-CB-16	0.30	0.7000	1.19	0.84	0.25	1.61	0 00:09:21
9	Sub-CB-17	0.25	0.7000	1.14	0.80	0.20	1.41	0 00:08:26
10	Sub-CB-18	0.76	0.7000	1.52	1.06	0.81	3.30	0 00:14:44
11	Sub-CB-2	0.15	0.7000	1.00	0.70	0.11	0.95	0 00:06:39
12	Sub-CB-20	0.61	0.7000	1.22	0.85	0.52	3.24	0 00:09:37
13	Sub-CB-21	0.81	0.7000	1.64	1.15	0.93	3.32	0 00:16:54
14	Sub-CB-22	1.23	0.7000	1.77	1.24	1.53	4.78	0 00:19:13
15	Sub-CB-23	0.85	0.7000	1.61	1.13	0.96	3.55	0 00:16:07
16	Sub-CB-25	0.66	0.7000	0.98	0.69	0.45	4.29	0 00:06:15
17	Sub-CB-26	0.41	0.7000	0.86	0.60	0.25	2.96	0 00:05:00
18	Sub-CB-28	0.35	0.7000	1.50	1.05	0.37	1.54	0 00:14:16
19	Sub-CB-29	0.32	0.7000	1.64	1.14	0.37	1.32	0 00:16:41
20	Sub-CB-30	0.44	0.7000	1.68	1.17	0.52	1.80	0 00:17:16
21	Sub-CB-31	0.28	0.5000	1.47	0.74	0.21	0.89	0 00:13:48
22	Sub-CB-32	0.24	0.7000	1.58	1.11	0.27	1.03	0 00:15:37
23	Sub-CB-33	0.45	0.7000	1.61	1.13	0.51	1.87	0 00:16:22
24	Sub-CB-37	0.27	0.7000	1.56	1.09	0.30	1.16	0 00:15:16
25	Sub-CB-38	0.38	0.7000	1.39	0.97	0.37	1.78	0 00:12:34
26	Sub-CB-40	0.63	0.7000	1.21	0.84	0.53	3.35	0 00:09:30
27	Sub-CB-43	0.57	0.7000	1.64	1.15	0.66	2.34	0 00:16:54
28	Sub-CB-44	0.48	0.7000	1.67	1.17	0.56	1.96	0 00:17:09
29	Sub-CB-45	0.24	0.7000	1.09	0.76	0.18	1.40	0 00:07:51
30	Sub-CB-51	0.76	0.7000	1.91	1.34	1.02	2.81	0 00:21:40
31	Sub-CB-9	0.54	0.7000	1.73	1.21	0.65	2.14	0 00:18:21
32	Sub-SDPIPE-35	0.16	0.7000	1.29	0.90	0.14	0.81	0 00:10:36
33	Sub-SDPIPE-36	1.73	0.7000	2.09	1.46	2.53	6.00	0 00:25:20

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	M Freeboa Attain (
1	AD-49	Junction	468.50	472.65	468.50	472.65	10.00	28.58	470.62	0.00	2.
2	CB-47	Junction	471.00	479.32	471.00	479.32	10.00	17.05	474.95	0.00	4.
3	CB-8	Junction	468.50	474.72	468.50	474.72	10.00	3.98	469.14	0.00	5.
4	JB	Junction	462.30	468.30	462.30	468.30	0.00	1.21	462.74	0.00	5.
5	JB-19	Junction	502.00	509.27	502.00	509.27	10.00	17.74	502.60	0.00	6.
6	JB-24	Junction	526.00	535.80	526.00	535.80	10.00	7.75	526.52	0.00	9.
7	JB-27	Junction	534.00	539.80	534.00	539.80	10.00	6.03	534.56	0.00	5.
8	JB-39	Junction	510.00	521.73	510.00	521.73	10.00	3.17	510.35	0.00	11.
9	JB-4	Junction	462.74	473.05	462.74	473.05	10.00	0.00	462.74	0.00	10.
10	JB-SDPIPE35	Junction	462.75	464.00	462.75	0.00	100.00	1.21	463.13	0.00	1.
11	JB-SDPIPE36	Junction	441.30	442.80	441.30	0.00	1000.00	6.00	442.44	0.00	0.
12	8-Jun	Junction	538.50	544.50	538.50	544.50	0.00	1.80	539.14	0.00	5.
13	WIER-6	Junction	468.00	472.50	468.00	472.50	10.00	0.00	468.00	0.00	4.
14	FES-1	Outfall	461.00					2.26	461.38		
15	FES-3	Outfall	538.50					1.70	538.99		
16	FES-36	Outfall	472.00					8.73	472.54		
17	FES-46	Outfall	468.25					28.58	469.69		
18	FES-48	Outfall	468.00					17.05	469.12		
19	FES-7	Outfall	468.00					3.98	468.52		
20	3-Jun	Outfall	0.00					0.00	0.01		
21	OUT-SDPIPE35	Outfall	462.25					1.18	462.48		
22	Out-SDPIPE-36	Outfall	441.00					5.99	441.89		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Fl Dep
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1	Link-05	Pipe	CB-16	CB-13	406.55	517.00	503.00	3.4400	18.000	0.0150	0.09	15.32	0.01	2.99	0.
2	Link-08	Pipe	JB-SDPIPE35	JB	30.00	462.75	462.25	1.6700	15.000	0.0120	1.21	8.57	0.14	3.49	0.
3	Link-30	Pipe	CB-51	JB-SDPIPE35	30.83	462.08	462.75	-2.1800	18.000	0.0150	1.05	28.73	0.04	4.96	0.
4	Link-33	Pipe	CB-2	FES-1	33.60	461.75	461.00	2.2300	24.000	0.0150	2.26	29.29	0.08	4.97	0.
5	Link-37	Pipe	JB	OUT-SDPIPE35	0.96	462.30	462.25	5.2100	15.000	0.0120	1.18	15.97	0.07	4.47	0.
6	Link-39	Pipe	8-Jun	FES-3	0.36	538.50	538.50	0.0000	18.000	0.0130	1.70	5.54	0.31	2.78	0.
7	L-SDPIPE-8	Pipe	CB-47	FES-48	70.00	471.00	468.00	4.2900	18.000	0.0150	17.05	18.85	0.90	10.42	1.
8	SDPIPE-10	Pipe	CB-13	CB-11	187.03	493.00	486.75	3.3400	18.000	0.0120	13.98	20.80	0.67	11.56	0.
9	SDPIPE-11	Pipe	CB-14	CB-13	66.59	502.00	498.50	5.2600	18.000	0.0130	12.76	24.08	0.53	11.70	0.
10	SDPIPE-12	Pipe	CB-15	CB-14	297.35	513.00	503.00	3.3600	18.000	0.0120	7.33	20.87	0.35	10.36	0.
11	SDPIPE-13	Pipe	CB-16	CB-15	64.00	514.00	513.00	1.5600	18.000	0.0130	4.25	13.13	0.32	5.72	0.
12	SDPIPE-14	Pipe	CB-17	CB-16	322.00	528.00	514.00	4.3500	18.000	0.0130	2.87	21.90	0.13	5.67	0.
13	SDPIPE-15	Pipe	CB-18	CB-17	42.43	529.00	528.00	2.3600	18.000	0.0130	2.28	16.13	0.14	6.03	0.
14	SDPIPE-16	Pipe	CB-20	JB-19	131.65	504.25	502.00	1.7100	24.000	0.0120	17.74	32.04	0.55	11.04	1.
15	SDPIPE-17	Pipe	CB-21	CB-20	32.94	508.50	508.00	1.5200	24.000	0.0120	17.18	30.19	0.57	7.69	1.
16	SDPIPE-18	Pipe	CB-22	CB-21	77.00	510.00	508.50	1.9500	18.000	0.0120	3.54	15.88	0.22	3.63	0.
17	SDPIPE-19	Pipe	CB-23	CB-21	75.59	509.50	508.50	1.3200	18.000	0.0120	3.17	13.09	0.24	2.97	1.
18	SDPIPE-2	Pipe	JB-4	CB-2	99.00	462.74	461.75	1.0000	24.000	0.0130	0.00	22.62	0.00	0.00	0.
19	SDPIPE-20	Pipe	JB-24	CB-21	256.11	526.00	508.50	6.8300	18.000	0.0120	7.75	29.75	0.26	7.42	0.
20	SDPIPE-21	Pipe	CB-25	JB-24	69.87	527.00	526.00	1.4300	18.000	0.0120	7.75	13.61	0.57	8.20	0.
21	SDPIPE-22	Pipe	CB-26	CB-25	33.08	530.50	527.00	10.5800	18.000	0.0130	1.49	34.17	0.04	2.30	0.
22	SDPIPE-23	Pipe	JB-27	CB-25	222.35	534.00	527.00	3.1500	18.000	0.0120	6.02	20.19	0.30	6.83	0.
23	SDPIPE-24	Pipe	CB-28	JB-27	73.59	537.00	534.00	4.0800	18.000	0.0130	6.03	21.21	0.28	9.16	0.
24	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	1.02	14.89	0.07	4.61	0.
25	SDPIPE-25 (1)	Pipe	CB-29	CB-28	44.82	537.50	537.00	1.1200	18.000	0.0130	4.64	11.09	0.42	5.44	0.
26	SDPIPE-25 (12)	Pipe	CB-43	CB-37	42.57	484.50	484.00	1.1700	18.000	0.0130	2.11	11.38	0.19	4.39	0.
27	SDPIPE-25 (13)	Pipe	CB-44	CB-38	33.23	496.00	494.50	4.5100	18.000	0.0130	2.15	22.32	0.10	5.87	0.
28	SDPIPE-25 (14)	Pipe	CB-45	JB-39	46.24	515.00	514.00	2.1600	18.000	0.0130	1.23	15.45	0.08	4.84	0.

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Fl Dep
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
46	Link-01	Channel	CB-30	CB-29	151.74	547.90	542.86	3.3200	3.960	0.0320	0.15	5.85	0.03	1.57	0.
47	Link-02	Channel	CB-28	CB-18	253.20	542.65	534.99	3.0300	3.960	0.0320	0.07	5.59	0.01	0.26	0.
48	Link-03	Channel	CB-18	CB-15	303.55	534.99	520.24	4.8600	3.960	0.0320	1.08	7.51	0.14	1.17	0.
49	Link-04	Channel	CB-15	CB-14	302.16	520.24	513.25	2.3100	3.960	0.0320	2.37	4.19	0.57	1.27	0.
50	Link-06	Channel	CB-13	CB-11	192.70	508.19	490.69	9.0800	3.960	0.0320	0.07	9.68	0.01	0.61	0.
51	Link-07	Channel	CB-12	CB-10	295.35	491.89	474.00	6.0600	3.960	0.0320	1.01	7.90	0.13	0.82	0.
52	Link-09	Channel	CB-17	CB-22	172.84	533.32	517.04	9.4200	3.960	0.0320	0.07	9.88	0.01	0.62	0.
53	Link-10	Channel	CB-22	CB-21	156.96	517.04	515.89	0.7300	3.960	0.0320	1.23	2.67	0.46	0.70	0.
54	Link-11	Channel	CB-23	CB-21	80.56	516.98	515.89	1.3500	3.960	0.0320	0.32	3.74	0.09	0.29	0.
55	Link-12	Channel	CB-45	CB-23	172.11	524.64	516.98	4.4500	3.960	0.0320	0.15	6.78	0.02	2.57	0.
56	Link-13	Channel	CB-40	CB-44	228.53	524.80	507.00	7.7900	3.960	0.0320	1.22	8.96	0.14	3.91	0.
57	Link-14	Channel	CB-44	CB-43	236.24	500.50	482.00	7.8300	3.960	0.0320	0.40	8.97	0.04	1.55	0.
58	Link-15	Channel	CB-38	CB-37	208.04	506.87	490.69	7.7800	3.960	0.0320	0.28	8.96	0.03	2.64	0.
59	Link-16	Channel	CB-37	CB-9	218.60	490.69	474.00	7.6400	3.960	0.0320	0.07	8.87	0.01	0.10	0.
60	Link-17	Channel	CB-43	CB-51	291.31	488.57	465.82	7.8100	3.960	0.0320	0.60	8.97	0.07	1.65	0.
61	Link-18	Channel	CB-10	CB-2	126.47	474.00	465.77	6.5100	3.960	0.0320	0.00	8.19	0.00	0.00	0.
62	Link-19	Channel	CB-33	CB-28	176.20	547.88	542.65	2.9700	3.960	0.0320	0.18	5.53	0.03	1.40	0.
63	Link-20	Channel	CB-11	CB-9	282.13	490.69	474.00	5.9200	3.960	0.0320	0.61	7.81	0.08	0.76	0.
64	Link-24	Channel	CB-29	CB-26	316.29	542.86	535.29	2.3900	3.960	0.0320	0.02	4.97	0.00	0.60	0.
65	Link-28	Channel	CB-32	3-Jun	204.60	549.87	0.00	268.7500	3.960	0.0320	0.00	52.65	0.00	0.00	0.
66	Link-38	Channel	CB-2	JB	44.72	465.77	462.30	7.7600	3.960	0.0320	0.03	8.95	0.00	0.06	0.
67	Link-40	Channel	CB-31	8-Jun	97.13	549.37	538.50	11.1900	3.960	0.0320	0.00	10.74	0.00	0.00	0.

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutt Sprea during Pea Flo (
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.43	474.00	469.43	10.00	3.20	N/A	N/A	N/A	8.50	6.5
2	CB-11	FHWA HEC-22 GENERIC	N/A	On Grade	1	481.00	490.69	481.00	N/A	2.32	1.68	0.64	72.48	8.50	5.5
3	CB-12	FHWA HEC-22 GENERIC	N/A	On Grade	1	485.50	491.89	485.50	N/A	2.94	1.93	1.01	65.53	8.50	6.(
4	CB-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	493.00	508.19	493.00	N/A	1.98	1.84	0.15	92.56	8.50	6.7
5	CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	502.00	513.25	502.00	10.00	5.66	N/A	N/A	N/A	8.50	11.4
6	CB-15	FHWA HEC-22 GENERIC	N/A	On Grade	1	513.00	518.39	513.00	N/A	6.28	3.14	3.15	49.92	8.50	8.7
7	CB-16	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.00	519.70	514.00	N/A	1.61	1.43	0.19	88.46	8.50	5.4
8	CB-17	FHWA HEC-22 GENERIC	N/A	On Grade	1	528.00	533.32	528.00	N/A	1.41	1.30	0.11	92.04	8.50	4.9
9	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	529.00	534.99	529.00	N/A	3.36	2.25	1.12	66.74	8.50	6.8
10	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	461.75	465.77	461.75	N/A	0.95	0.93	0.02	98.06	8.50	4.(
11	CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	504.25	515.89	504.25	10.00	3.23	N/A	N/A	N/A	8.50	7.8
12	CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	508.50	515.89	508.50	10.00	4.53	N/A	N/A	N/A	8.50	9.8
13	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	510.00	516.97	510.00	N/A	4.78	3.54	1.24	74.00	8.50	7.4
14	CB-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	509.50	516.98	509.50	N/A	3.55	3.23	0.33	90.77	8.50	7.(
15	CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	527.00	535.29	527.00	10.00	4.29	N/A	N/A	N/A	8.50	9.5
16	CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.50	535.29	530.50	10.00	2.95	N/A	N/A	N/A	8.50	7.4
17	CB-28	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.00	542.65	537.00	N/A	1.65	1.54	0.11	93.55	8.50	5.8
18	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.50	542.86	537.50	N/A	1.44	1.39	0.05	96.58	8.50	5.5
19	CB-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	543.50	547.90	543.50	N/A	1.80	1.65	0.16	91.35	8.50	6.(
20	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.89	0.89	0.00	100.00	8.50	4.(
21	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.87	546.00	N/A	1.03	1.03	0.00	100.00	8.50	4.5
22	CB-33	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.00	547.88	544.00	N/A	1.87	1.69	0.18	90.46	8.50	6.1
23	CB-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	478.50	490.69	478.50	N/A	1.37	1.23	0.14	89.84	8.50	4.(
24	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	494.50	506.87	494.50	N/A	1.78	1.46	0.31	82.38	8.50	5.1
25	CB-40	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.80	515.00	N/A	3.35	2.13	1.22	63.67	8.50	6.5
26	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.50	488.57	484.50	N/A	2.72	1.89	0.82	69.69	8.50	6.(
27	CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.00	507.00	496.00	N/A	2.31	1.72	0.59	74.58	8.50	5.(
28	CB-45	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.64	515.00	N/A	1.40	1.25	0.15	89.20	8.50	4.7

Subbasin Hydrology

Subbasin : Sub-AD-49

Input Data

Area (ac) 4.59
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	4.59	-	0.7
Composite Area & Weighted Runoff Coeff.	4.59		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.4	0	0
Flow Length (ft) :	299.3	0	0
Slope (%) :	8.53	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	24.81	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	184.58	0	0
Slope (%) :	14.79	0	0
Surface Type :	Woodland	Paved	Paved
Velocity (ft/sec) :	1.92	0	0
Computed Flow Time (min) :	1.6	0	0

Total TOC (min) 26.41

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.54
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	-	0.7
Composite Area & Weighted Runoff Coeff.	0.54		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	62.75	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	13.31	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	287	0	0
Slope (%) :	6.16	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.05	0	0
Computed Flow Time (min) :	0.95	0	0

Total TOC (min) 14.26

Subbasin : Sub-CB-11

Input Data

Area (ac) 0.44
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.44	-	0.7
Composite Area & Weighted Runoff Coeff.	0.44		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	87.01933392	0	0
Slope (%) :	4.23334562	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	9.71	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	144.6117952	0	0
Slope (%) :	9.33800334	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.21	0	0
Computed Flow Time (min) :	0.39	0	0

Total TOC (min) 10.10

Subbasin : Sub-CB-12

Input Data

Area (ac) 0.7
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.7	-	0.7
Composite Area & Weighted Runoff Coeff.	0.7		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	72.34441067	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	14.92	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	290.7440621	0	0
Slope (%) :	7.85301046	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	4.52	0	0
Computed Flow Time (min) :	1.07	0	0

Total TOC (min) 15.99

Subbasin : Sub-CB-13

Input Data

Area (ac) 0.37
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.37	-	0.7
Composite Area & Weighted Runoff Coeff.	0.37		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.99	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.72	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	326.6	0	0
Slope (%) :	3.5	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.8	0	0
Computed Flow Time (min) :	1.43	0	0

Total TOC (min) 10.16

Subbasin : Sub-CB-14

Input Data

Area (ac) 0.87
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.87	-	0.7
Composite Area & Weighted Runoff Coeff.	0.87		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	133.09	0	0
Slope (%) :	7.48	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	10.86	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.63	0	0
Slope (%) :	2.32	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.1	0	0
Computed Flow Time (min) :	1.21	0	0

Total TOC (min) 12.07

Subbasin : Sub-CB-15

Input Data

Area (ac) 1.24
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.24	-	0.7
Composite Area & Weighted Runoff Coeff.	1.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	129.63	0	0
Slope (%) :	3.84	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	13.89	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	369.75	0	0
Slope (%) :	4.45	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.29	0	0
Computed Flow Time (min) :	1.44	0	0

Total TOC (min) 15.32

Subbasin : Sub-CB-16

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.3	-	0.7
Composite Area & Weighted Runoff Coeff.	0.3		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	35.63	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.47	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	225.56	0	0
Slope (%) :	4.29	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.21	0	0
Computed Flow Time (min) :	0.89	0	0

Total TOC (min) 9.36

Subbasin : Sub-CB-17

Input Data

Area (ac) 0.25
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.25	-	0.7
Composite Area & Weighted Runoff Coeff.	0.25		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	30.83	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	7.54	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.33	0	0
Slope (%) :	4.052	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.09	0	0
Computed Flow Time (min) :	0.9	0	0

Total TOC (min) 8.44

Subbasin : Sub-CB-18

Input Data

Area (ac) 0.76
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.76	-	0.7
Composite Area & Weighted Runoff Coeff.	0.76		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	169.6828048	0	0
Slope (%) :	5.92476783	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	14.48	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	75.81153859	0	0
Slope (%) :	5.8473515	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.92	0	0
Computed Flow Time (min) :	0.26	0	0

Total TOC (min) 14.74

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.15
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	49.14	0	0
Slope (%) :	3.51	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.12	0	0
Computed Flow Time (min) :	6.63	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	7.8	0	0
Slope (%) :	7.9	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.71	0	0
Computed Flow Time (min) :	0.02	0	0

Total TOC (min) 6.65

Subbasin : Sub-CB-20

Input Data

Area (ac) 0.61
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.61	-	0.7
Composite Area & Weighted Runoff Coeff.	0.61		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.97	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.72	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	228.24	0	0
Slope (%) :	4.33669128	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.23	0	0
Computed Flow Time (min) :	0.9	0	0

Total TOC (min) 9.62

Subbasin : Sub-CB-21

Input Data

Area (ac) 0.81
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.81	-	0.7
Composite Area & Weighted Runoff Coeff.	0.81		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	225.91	0	0
Slope (%) :	7.69	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	16.41	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	74	0	0
Slope (%) :	1.44	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.44	0	0
Computed Flow Time (min) :	0.51	0	0

Total TOC (min) 16.91

Subbasin : Sub-CB-22

Input Data

Area (ac) 1.23
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.23	-	0.7
Composite Area & Weighted Runoff Coeff.	1.23		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	227.07	0	0
Slope (%) :	5.59	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	18.71	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	150.89	0	0
Slope (%) :	5.73	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.52	0	0

Total TOC (min) 19.23

Subbasin : Sub-CB-23

Input Data

Area (ac) 0.85
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.85	-	0.7
Composite Area & Weighted Runoff Coeff.	0.85		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	226.71	0	0
Slope (%) :	8.51	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.24	0	0
Computed Flow Time (min) :	15.8	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	75.07	0	0
Slope (%) :	3.73	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.93	0	0
Computed Flow Time (min) :	0.32	0	0

Total TOC (min) 16.12

Subbasin : Sub-CB-25

Input Data

Area (ac) 0.66
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.7
Composite Area & Weighted Runoff Coeff.	0.66		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.69	0	0
Slope (%) :	3.98	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.12	0	0
Computed Flow Time (min) :	4.99	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	218	0	0
Slope (%) :	1.9995265	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.26	0	0

Total TOC (min) 6.25

Subbasin : Sub-CB-26

Input Data

Area (ac) 0.41
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.41	-	0.7
Composite Area & Weighted Runoff Coeff.	0.41		0.7

Time of Concentration

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	391.04	0	0
Slope (%) :	2.05	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.91	0	0
Computed Flow Time (min) :	2.24	0	0

Total TOC (min) 2.24

Subbasin : Sub-CB-28

Input Data

Area (ac) 0.35
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.35	-	0.7
Composite Area & Weighted Runoff Coeff.	0.35		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.21	0	0
Slope (%) :	1.57	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	13.8	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	96.33	0	0
Slope (%) :	2.66	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.32	0	0
Computed Flow Time (min) :	0.48	0	0

Total TOC (min) 14.28

Subbasin : Sub-CB-29

Input Data

Area (ac) 0.32
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	79.19359172	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.04	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	145.6546025	0	0
Slope (%) :	3.30814128	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.7	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 16.69

Subbasin : Sub-CB-30

Input Data

Area (ac) 0.44
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.44	-	0.7
Composite Area & Weighted Runoff Coeff.	0.44		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	80.06466793	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.18	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	204.4355599	0	0
Slope (%) :	2.37620836	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.13	0	0
Computed Flow Time (min) :	1.09	0	0

Total TOC (min) 17.27

Subbasin : Sub-CB-31

Input Data

Area (ac) 0.28
Weighted Runoff Coefficient 0.5

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.5
Composite Area & Weighted Runoff Coeff.	0.28		0.5

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	61.18415656	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	13.05	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	147.427748	0	0
Slope (%) :	2.48368186	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.2	0	0
Computed Flow Time (min) :	0.77	0	0

Total TOC (min) 13.81

Subbasin : Sub-CB-32

Input Data

Area (ac) 0.24
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	72.82652581	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	15	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	123.3068858	0	0
Slope (%) :	2.56696146	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.26	0	0
Computed Flow Time (min) :	0.63	0	0

Total TOC (min) 15.63

Subbasin : Sub-CB-33

Input Data

Area (ac) 0.45
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	-	0.7
Composite Area & Weighted Runoff Coeff.	0.45		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	74.8476514	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	15.33	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	205.0538871	0	0
Slope (%) :	2.54735015	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.24	0	0
Computed Flow Time (min) :	1.05	0	0

Total TOC (min) 16.38

Subbasin : Sub-CB-37

Input Data

Area (ac) 0.27
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	70.96	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	14.69	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	204.13	0	0
Slope (%) :	7.95	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.59	0	0

Total TOC (min) 15.28

Subbasin : Sub-CB-38

Input Data

Area (ac) 0.38
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	56.31288611	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	12.21	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	122.2285539	0	0
Slope (%) :	7.88883657	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.71	0	0
Computed Flow Time (min) :	0.36	0	0

Total TOC (min) 12.57

Subbasin : Sub-CB-40

Input Data

Area (ac) 0.63
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.63	-	0.7
Composite Area & Weighted Runoff Coeff.	0.63		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.47168729	0	0
Slope (%) :	4.83233018	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	8.82	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	225.6819013	0	0
Slope (%) :	7.22299665	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.46	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 9.51

Subbasin : Sub-CB-43

Input Data

Area (ac) 0.57
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.57	-	0.7
Composite Area & Weighted Runoff Coeff.	0.57		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	80.44365706	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.24	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	230.963887	0	0
Slope (%) :	7.93293268	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.67	0	0

Total TOC (min) 16.91

Subbasin : Sub-CB-44

Input Data

Area (ac)	0.48
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.48	-	0.7
Composite Area & Weighted Runoff Coeff.	0.48		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.23540495	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.53	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	215.6393568	0	0
Slope (%) :	7.93956492	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.63	0	0

Total TOC (min) 17.16

Subbasin : Sub-CB-45

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	26.67	0	0
Slope (%) :	0.84	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	7.2	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221	0	0
Slope (%) :	7.58	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.6	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 7.86

Subbasin : Sub-CB-51

Input Data

Area (ac)	0.76
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.76	-	0.7
Composite Area & Weighted Runoff Coeff.	0.76		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	109.87	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	20.84	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	284.96	0	0
Slope (%) :	7.93363114	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.83	0	0

Total TOC (min) 21.67

Subbasin : Sub-CB-9

Input Data

Area (ac)	0.54
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	-	0.7
Composite Area & Weighted Runoff Coeff.	0.54		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	94.51887751	0	0
Slope (%) :	1.1562359	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	17.43	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	272.2215693	0	0
Slope (%) :	5.96622322	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.97	0	0
Computed Flow Time (min) :	0.91	0	0

Total TOC (min) 18.35

Subbasin : Sub-SDPIPE-35

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	117.01	0	0
Slope (%) :	6.14	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	10.61	0	0

Total TOC (min) 10.61

Subbasin : Sub-SDPIPE-36

Input Data

Area (ac)	1.73
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.7
Composite Area & Weighted Runoff Coeff.	1.73		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	299.51	0	0
Slope (%) :	6	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.22	0	0
Computed Flow Time (min) :	22.7	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	546	0	0
Slope (%) :	5.3	0	0
Surface Type :	Grassed waterway	Unpaved	Unpaved
Velocity (ft/sec) :	3.45	0	0
Computed Flow Time (min) :	2.64	0	0

Total TOC (min) 25.34

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	AD-49	468.50	472.65	4.15	468.50	0.00	472.65	0.00	10.00	19.85
2	CB-47	471.00	479.32	8.32	471.00	0.00	479.32	0.00	10.00	81.81
3	CB-8	468.50	474.72	6.22	468.50	0.00	474.72	0.00	10.00	50.59
4	JB	462.30	468.30	6.00	462.30	0.00	468.30	0.00	0.00	57.00
5	JB-19	502.00	509.27	7.27	502.00	0.00	509.27	0.00	10.00	63.30
6	JB-24	526.00	535.80	9.80	526.00	0.00	535.80	0.00	10.00	99.54
7	JB-27	534.00	539.80	5.80	534.00	0.00	539.80	0.00	10.00	51.59
8	JB-39	510.00	521.73	11.73	510.00	0.00	521.73	0.00	10.00	74.75
9	JB-4	462.74	473.05	10.31	462.74	0.00	473.05	0.00	10.00	99.76
10	JB-SDPIPE35	462.75	464.00	1.25	462.75	0.00	0.00	-464.00	100.00	0.00
11	JB-SDPIPE36	441.30	442.80	1.50	441.30	0.00	0.00	-442.80	1000.00	0.00
12	8-Jun	538.50	544.50	6.00	538.50	0.00	544.50	0.00	0.00	54.00
13	WIER-6	468.00	472.50	4.50	468.00	0.00	472.50	0.00	10.00	30.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Oc (days
1	AD-49	28.58	15.65	470.62	2.12	0.00	2.04	468.58	0.08	0 00:19	
2	CB-47	17.05	0.00	474.95	3.95	0.00	4.37	471.04	0.04	0 00:11	
3	CB-8	3.98	0.00	469.14	0.64	0.00	5.57	468.52	0.02	0 00:19	
4	JB	1.21	0.00	462.74	0.44	0.00	5.56	462.31	0.01	0 00:17	
5	JB-19	17.74	0.00	502.60	0.60	0.00	6.67	502.02	0.02	0 00:17	
6	JB-24	7.75	0.00	526.52	0.52	0.00	9.27	526.02	0.02	0 00:07	
7	JB-27	6.03	0.00	534.56	0.56	0.00	5.24	534.02	0.02	0 00:17	
8	JB-39	3.17	0.00	510.35	0.35	0.00	11.37	510.01	0.01	0 00:09	
9	JB-4	0.00	0.00	462.74	0.00	0.00	10.31	462.74	0.00	0 00:00	
10	JB-SDPIPE35	1.21	0.81	463.13	0.38	0.00	1.12	462.76	0.01	0 00:17	
11	JB-SDPIPE36	6.00	6.00	442.44	1.14	0.00	0.36	441.34	0.04	0 00:25	
12	8-Jun	1.80	0.00	539.14	0.64	0.00	5.36	538.52	0.02	0 00:16	
13	WIER-6	0.00	0.00	468.00	0.00	0.00	4.50	468.00	0.00	0 00:00	

Channel Input

SN	Element ID	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Drop	Average Slope	Shape	Height	Width	Manning's Roughness	Er
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)		
1	Link-01	151.74	547.90	4.40	542.86	5.36	5.04	3.3200	User-Defined	0.330	14.000	0.0320	
2	Link-02	253.20	542.65	5.65	534.99	5.99	7.66	3.0300	User-Defined	0.330	14.000	0.0320	
3	Link-03	303.55	534.99	5.99	520.24	7.24	14.75	4.8600	User-Defined	0.330	14.000	0.0320	
4	Link-04	302.16	520.24	7.24	513.25	11.25	6.99	2.3100	User-Defined	0.330	14.000	0.0320	
5	Link-06	192.70	508.19	15.19	490.69	9.69	17.50	9.0800	User-Defined	0.330	14.000	0.0320	
6	Link-07	295.35	491.89	6.39	474.00	4.56	17.89	6.0600	User-Defined	0.330	14.000	0.0320	
7	Link-09	172.84	533.32	5.32	517.04	7.04	16.28	9.4200	User-Defined	0.330	14.000	0.0320	
8	Link-10	156.96	517.04	7.04	515.89	7.39	1.15	0.7300	User-Defined	0.330	14.000	0.0320	
9	Link-11	80.56	516.98	7.48	515.89	7.39	1.09	1.3500	User-Defined	0.330	14.000	0.0320	
10	Link-12	172.11	524.64	9.64	516.98	7.48	7.67	4.4500	User-Defined	0.330	14.000	0.0320	
11	Link-13	228.53	524.80	9.80	507.00	11.00	17.80	7.7900	User-Defined	0.330	14.000	0.0320	
12	Link-14	236.24	500.50	4.50	482.00	-2.50	18.50	7.8300	User-Defined	0.330	14.000	0.0320	
13	Link-15	208.04	506.87	12.37	490.69	12.19	16.18	7.7800	User-Defined	0.330	14.000	0.0320	
14	Link-16	218.60	490.69	12.19	474.00	4.90	16.69	7.6400	User-Defined	0.330	14.000	0.0320	
15	Link-17	291.31	488.57	4.07	465.82	3.74	22.75	7.8100	User-Defined	0.330	14.000	0.0320	
16	Link-18	126.47	474.00	4.56	465.77	4.02	8.23	6.5100	User-Defined	0.330	14.000	0.0320	
17	Link-19	176.20	547.88	3.88	542.65	5.65	5.23	2.9700	User-Defined	0.330	14.000	0.0320	
18	Link-20	282.13	490.69	9.69	474.00	4.90	16.70	5.9200	User-Defined	0.330	14.000	0.0320	
19	Link-24	316.29	542.86	5.36	535.29	4.79	7.57	2.3900	User-Defined	0.330	14.000	0.0320	
20	Link-28	204.60	549.87	3.87	0.00	0.00	549.87	268.7500	User-Defined	0.330	14.000	0.0320	
21	Link-38	44.72	465.77	4.02	462.30	0.00	3.47	7.7600	User-Defined	0.330	14.000	0.0320	
22	Link-40	97.13	549.37	4.87	538.50	0.00	10.87	11.1900	User-Defined	0.330	14.000	0.0320	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	Link-01	0.15	0 00:17	5.85	0.03	1.57	1.61	0.06	0.20	0.00	
2	Link-02	0.07	0 00:14	5.59	0.01	0.26	16.23	0.11	0.33	0.00	
3	Link-03	1.08	0 00:14	7.51	0.14	1.17	4.32	0.21	0.63	0.00	
4	Link-04	2.37	0 00:15	4.19	0.57	1.27	3.97	0.30	0.90	0.00	
5	Link-06	0.07	0 00:11	9.68	0.01	0.61	5.27	0.08	0.25	0.00	
6	Link-07	1.01	0 00:16	7.90	0.13	0.82	6.00	0.24	0.73	0.00	
7	Link-09	0.07	0 00:09	9.88	0.01	0.62	4.65	0.13	0.40	0.00	
8	Link-10	1.23	0 00:19	2.67	0.46	0.70	3.74	0.29	0.87	0.00	
9	Link-11	0.32	0 00:16	3.74	0.09	0.29	4.63	0.23	0.69	0.00	
10	Link-12	0.15	0 00:08	6.78	0.02	2.57	1.12	0.07	0.21	0.00	
11	Link-13	1.22	0 00:09	8.96	0.14	3.91	0.97	0.12	0.37	0.00	
12	Link-14	0.40	0 00:17	8.97	0.04	1.55	2.54	0.11	0.33	0.00	
13	Link-15	0.28	0 00:13	8.96	0.03	2.64	1.31	0.07	0.21	0.00	
14	Link-16	0.07	0 00:15	8.87	0.01	0.10	36.43	0.19	0.58	0.00	
15	Link-17	0.60	0 00:17	8.97	0.07	1.65	2.94	0.13	0.40	0.00	
16	Link-18	0.00	0 00:00	8.19	0.00	0.00		0.01	0.04	0.00	
17	Link-19	0.18	0 00:16	5.53	0.03	1.40	2.10	0.08	0.23	0.00	
18	Link-20	0.61	0 00:10	7.81	0.08	0.76	6.19	0.21	0.65	0.00	
19	Link-24	0.02	0 00:18	4.97	0.00	0.60	8.79	0.17	0.50	0.00	
20	Link-28	0.00	0 00:15	52.65	0.00	0.00		0.00	0.01	0.00	
21	Link-38	0.03	0 00:06	8.95	0.00	0.06	12.42	0.18	0.54	0.00	
22	Link-40	0.00	0 00:00	10.74	0.00	0.00		0.17	0.50	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Mar Roug
1	Link-05	406.55	517.00	3.00	503.00	10.00	14.00	3.4400	CIRCULAR	18.000	18.000	
2	Link-08	30.00	462.75	0.00	462.25	-0.05	0.50	1.6700	CIRCULAR	15.000	15.000	
3	Link-30	30.83	462.08	0.00	462.75	0.00	-0.67	-2.1800	CIRCULAR	18.000	18.000	
4	Link-33	33.60	461.75	0.00	461.00	0.00	0.75	2.2300	CIRCULAR	24.000	24.000	
5	Link-37	0.96	462.30	0.00	462.25	0.00	0.05	5.2100	CIRCULAR	15.000	15.000	
6	Link-39	0.36	538.50	0.00	538.50	0.00	0.00	0.0000	CIRCULAR	18.000	18.000	
7	L-SDPIPE-8	70.00	471.00	0.00	468.00	0.00	3.00	4.2900	CIRCULAR	18.000	18.000	
8	SDPIPE-10	187.03	493.00	0.00	486.75	5.75	6.25	3.3400	CIRCULAR	18.000	18.000	
9	SDPIPE-11	66.59	502.00	0.00	498.50	5.50	3.50	5.2600	CIRCULAR	18.000	18.000	
10	SDPIPE-12	297.35	513.00	0.00	503.00	1.00	10.00	3.3600	CIRCULAR	18.000	18.000	
11	SDPIPE-13	64.00	514.00	0.00	513.00	0.00	1.00	1.5600	CIRCULAR	18.000	18.000	
12	SDPIPE-14	322.00	528.00	0.00	514.00	0.00	14.00	4.3500	CIRCULAR	18.000	18.000	
13	SDPIPE-15	42.43	529.00	0.00	528.00	0.00	1.00	2.3600	CIRCULAR	18.000	18.000	
14	SDPIPE-16	131.65	504.25	0.00	502.00	0.00	2.25	1.7100	CIRCULAR	24.000	24.000	
15	SDPIPE-17	32.94	508.50	0.00	508.00	3.75	0.50	1.5200	CIRCULAR	24.000	24.000	
16	SDPIPE-18	77.00	510.00	0.00	508.50	0.00	1.50	1.9500	CIRCULAR	18.000	18.000	
17	SDPIPE-19	75.59	509.50	0.00	508.50	0.00	1.00	1.3200	CIRCULAR	18.000	18.000	
18	SDPIPE-2	99.00	462.74	0.00	461.75	0.00	0.99	1.0000	CIRCULAR	24.000	24.000	
19	SDPIPE-20	256.11	526.00	0.00	508.50	0.00	17.50	6.8300	CIRCULAR	18.000	18.000	
20	SDPIPE-21	69.87	527.00	0.00	526.00	0.00	1.00	1.4300	CIRCULAR	18.000	18.000	
21	SDPIPE-22	33.08	530.50	0.00	527.00	0.00	3.50	10.5800	CIRCULAR	18.000	18.000	
22	SDPIPE-23	222.35	534.00	0.00	527.00	0.00	7.00	3.1500	CIRCULAR	18.000	18.000	
23	SDPIPE-24	73.59	537.00	0.00	534.00	0.00	3.00	4.0800	CIRCULAR	18.000	18.000	
24	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	
25	SDPIPE-25 (1)	44.82	537.50	0.00	537.00	0.00	0.50	1.1200	CIRCULAR	18.000	18.000	
26	SDPIPE-25 (12)	42.57	484.50	0.00	484.00	5.50	0.50	1.1700	CIRCULAR	18.000	18.000	
27	SDPIPE-25 (13)	33.23	496.00	0.00	494.50	0.00	1.50	4.5100	CIRCULAR	18.000	18.000	
28	SDPIPE-25 (14)	46.24	515.00	0.00	514.00	4.00	1.00	2.1600	CIRCULAR	18.000	18.000	
29	SDPIPE-25 (15)	248.75	502.00	0.00	468.50	0.00	33.50	13.4700	CIRCULAR	24.000	24.000	
30	SDPIPE-25 (15) (1)	24.21	468.50	0.00	468.25	0.00	0.25	1.0300	CIRCULAR	30.000	30.000	
31	SDPIPE-25 (17)	32.91	462.08	0.00	461.75	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	
32	SDPIPE-25 (2)	150.25	543.50	0.00	537.50	0.00	6.00	3.9900	CIRCULAR	18.000	18.000	
33	SDPIPE-25 (3)	33.25	544.00	0.00	543.50	0.00	0.50	1.5000	CIRCULAR	18.000	18.000	
34	SDPIPE-25 (6)	87.00	478.50	0.00	472.00	0.00	6.50	7.4700	CIRCULAR	18.000	18.000	
35	SDPIPE-25 (7)	201.54	494.50	0.00	485.00	6.50	9.50	4.7100	CIRCULAR	18.000	18.000	
36	SDPIPE-25 (8)	196.25	510.00	0.00	498.00	3.50	12.00	6.1100	CIRCULAR	18.000	18.000	
37	SDPIPE-25 (9)	51.51	515.00	0.00	514.00	4.00	1.00	1.9400	CIRCULAR	18.000	18.000	
38	SDPIPE-32	95.98	544.50	0.00	538.50	0.00	6.00	6.2500	CIRCULAR	18.000	18.000	
39	SDPIPE-36	30.02	441.30	0.00	441.00	0.00	0.30	1.0000	CIRCULAR	18.000	18.000	
40	SDPIPE-4	112.76	468.00	0.00	462.74	0.00	5.26	4.6600	CIRCULAR	24.000	24.000	
41	SDPIPE-5	41.13	468.50	0.00	468.00	0.00	0.50	1.2200	CIRCULAR	24.000	24.000	
42	SDPIPE-6	55.12	469.10	0.00	468.50	0.00	0.60	1.0900	CIRCULAR	24.000	24.000	
43	SDPIPE-7	33.11	469.43	0.00	469.10	0.00	0.33	1.0100	CIRCULAR	24.000	24.000	
44	SDPIPE-8 (1)	127.57	481.00	0.00	471.00	0.00	10.00	7.8400	CIRCULAR	18.000	18.000	
45	SDPIPE-9	35.93	485.50	0.00	483.00	2.00	2.50	6.9600	CIRCULAR	18.000	18.000	

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Ti Surcharg
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(m
1	Link-05	0.09	0 00:11	15.32	0.01	2.99	2.27	0.07	0.05	0.
2	Link-08	1.21	0 00:17	8.57	0.14	3.49	0.14	0.41	0.33	0.
3	Link-30	1.05	0 00:21	28.73	0.04	4.96	0.10	0.27	0.18	0.
4	Link-33	2.26	0 00:17	29.29	0.08	4.97	0.11	0.41	0.20	0.
5	Link-37	1.18	0 00:17	15.97	0.07	4.47	0.00	0.33	0.27	0.
6	Link-39	1.70	0 00:16	5.54	0.31	2.78	0.00	0.57	0.38	0.
7	L-SDPIPE-8	17.05	0 00:13	18.85	0.90	10.42	0.11	1.31	0.87	0.
8	SDPIPE-10	13.98	0 00:13	20.80	0.67	11.56	0.27	0.97	0.65	0.
9	SDPIPE-11	12.76	0 00:14	24.08	0.53	11.70	0.09	0.89	0.59	0.
10	SDPIPE-12	7.33	0 00:14	20.87	0.35	10.36	0.48	0.63	0.42	0.
11	SDPIPE-13	4.25	0 00:10	13.13	0.32	5.72	0.19	0.66	0.44	0.
12	SDPIPE-14	2.87	0 00:09	21.90	0.13	5.67	0.95	0.53	0.35	0.
13	SDPIPE-15	2.28	0 00:14	16.13	0.14	6.03	0.12	0.40	0.27	0.
14	SDPIPE-16	17.74	0 00:17	32.04	0.55	11.04	0.20	1.02	0.51	0.
15	SDPIPE-17	17.18	0 00:18	30.19	0.57	7.69	0.07	1.34	0.67	0.
16	SDPIPE-18	3.54	0 00:19	15.88	0.22	3.63	0.35	0.99	0.66	0.
17	SDPIPE-19	3.17	0 00:16	13.09	0.24	2.97	0.42	1.07	0.71	0.
18	SDPIPE-2	0.00	0 00:00	22.62	0.00	0.00		0.22	0.11	0.
19	SDPIPE-20	7.75	0 00:07	29.75	0.26	7.42	0.58	0.99	0.66	0.
20	SDPIPE-21	7.75	0 00:07	13.61	0.57	8.20	0.14	0.79	0.53	0.
21	SDPIPE-22	1.49	0 00:07	34.17	0.04	2.30	0.24	0.64	0.42	0.
22	SDPIPE-23	6.02	0 00:17	20.19	0.30	6.83	0.54	0.75	0.50	0.
23	SDPIPE-24	6.03	0 00:17	21.21	0.28	9.16	0.13	0.60	0.40	0.
24	SDPIPE-25	1.02	0 00:15	14.89	0.07	4.61	0.27	0.27	0.18	0.
25	SDPIPE-25 (1)	4.64	0 00:17	11.09	0.42	5.44	0.14	0.73	0.49	0.
26	SDPIPE-25 (12)	2.11	0 00:17	11.38	0.19	4.39	0.16	0.48	0.32	0.
27	SDPIPE-25 (13)	2.15	0 00:09	22.32	0.10	5.87	0.09	0.45	0.30	0.
28	SDPIPE-25 (14)	1.23	0 00:08	15.45	0.08	4.84	0.16	0.30	0.20	0.
29	SDPIPE-25 (15)	17.74	0 00:17	89.94	0.20	8.42	0.49	1.30	0.65	0.
30	SDPIPE-25 (15) (1)	28.58	0 00:19	45.15	0.63	7.64	0.05	1.78	0.71	0.
31	SDPIPE-25 (17)	2.27	0 00:17	10.50	0.22	4.40	0.12	0.50	0.33	0.
32	SDPIPE-25 (2)	3.26	0 00:16	22.74	0.14	4.89	0.51	0.61	0.40	0.
33	SDPIPE-25 (3)	1.68	0 00:16	12.88	0.13	4.33	0.13	0.41	0.27	0.
34	SDPIPE-25 (6)	8.73	0 00:10	31.10	0.28	13.51	0.11	0.59	0.39	0.
35	SDPIPE-25 (7)	6.52	0 00:10	24.71	0.26	11.24	0.30	0.55	0.36	0.
36	SDPIPE-25 (8)	3.17	0 00:09	28.14	0.11	10.22	0.32	0.35	0.23	0.
37	SDPIPE-25 (9)	2.12	0 00:09	14.64	0.14	5.35	0.16	0.41	0.28	0.
38	SDPIPE-32	1.80	0 00:15	26.26	0.07	5.04	0.32	0.45	0.30	0.
39	SDPIPE-36	5.99	0 00:25	9.10	0.66	4.73	0.11	1.01	0.67	0.
40	SDPIPE-4	0.00	0 00:00	48.86	0.00	0.00		0.00	0.00	0.
41	SDPIPE-5	3.98	0 00:19	27.02	0.15	5.24	0.13	0.58	0.29	0.
42	SDPIPE-6	3.98	0 00:19	25.54	0.16	4.53	0.20	0.65	0.32	0.
43	SDPIPE-7	2.90	0 00:17	22.70	0.13	3.48	0.16	0.62	0.31	0.
44	SDPIPE-8 (1)	17.05	0 00:13	31.86	0.54	11.60	0.18	1.18	0.79	0.

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.43	474.00	4.56	469.43	0.00
2	CB-11	FHWA HEC-22 GENERIC	N/A	On Grade	1	481.00	490.69	9.69	481.00	0.00
3	CB-12	FHWA HEC-22 GENERIC	N/A	On Grade	1	485.50	491.89	6.39	485.50	0.00
4	CB-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	493.00	508.19	15.19	493.00	0.00
5	CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	502.00	513.25	11.25	502.00	0.00
6	CB-15	FHWA HEC-22 GENERIC	N/A	On Grade	1	513.00	518.39	5.39	513.00	0.00
7	CB-16	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.00	519.70	5.70	514.00	0.00
8	CB-17	FHWA HEC-22 GENERIC	N/A	On Grade	1	528.00	533.32	5.32	528.00	0.00
9	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	529.00	534.99	5.99	529.00	0.00
10	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	461.75	465.77	4.02	461.75	0.00
11	CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	504.25	515.89	11.64	504.25	0.00
12	CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	508.50	515.89	7.39	508.50	0.00
13	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	510.00	516.97	6.97	510.00	0.00
14	CB-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	509.50	516.98	7.48	509.50	0.00
15	CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	527.00	535.29	8.29	527.00	0.00
16	CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.50	535.29	4.79	530.50	0.00
17	CB-28	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.00	542.65	5.65	537.00	0.00
18	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.50	542.86	5.36	537.50	0.00
19	CB-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	543.50	547.90	4.40	543.50	0.00
20	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0.00
21	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.87	3.87	546.00	0.00
22	CB-33	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.00	547.88	3.88	544.00	0.00
23	CB-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	478.50	490.69	12.19	478.50	0.00
24	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	494.50	506.87	12.37	494.50	0.00
25	CB-40	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.80	9.80	515.00	0.00
26	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.50	488.57	4.07	484.50	0.00
27	CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.00	507.00	11.00	496.00	0.00
28	CB-45	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.64	9.64	515.00	0.00
29	CB-51	FHWA HEC-22 GENERIC	N/A	On Grade	1	462.08	465.82	3.74	462.08	0.00
30	CB-9	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.10	474.00	4.90	469.10	0.00

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
2	CB-11	0.0935	0.0254	0.0150	0.0200	1.00	0.1312	8.50
3	CB-12	0.0935	0.0254	0.0150	0.0200	1.00	0.1312	8.50
4	CB-13	0.0232	0.0254	0.0150	0.0200	1.00	0.1312	8.50
5	CB-14	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
6	CB-15	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
7	CB-16	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
8	CB-17	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
9	CB-18	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
10	CB-2	0.0788	0.0254	0.0150	0.0200	1.00	0.1312	8.50
11	CB-20	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
12	CB-21	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
13	CB-22	0.0780	0.0254	0.0150	0.0200	1.00	0.1312	8.50
14	CB-23	0.0381	0.0254	0.0150	0.0200	1.00	0.1312	8.50
15	CB-25	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
16	CB-26	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
17	CB-28	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
18	CB-29	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
19	CB-30	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
20	CB-31	0.0351	0.0254	0.0150	0.0200	1.00	0.1312	8.50
21	CB-32	0.0351	0.0254	0.0150	0.0200	1.00	0.1312	8.50
22	CB-33	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
23	CB-37	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
24	CB-38	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
25	CB-40	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
26	CB-43	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
27	CB-44	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
28	CB-45	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
29	CB-51	0.0788	0.0254	0.0150	0.0200	1.00	0.1312	8.50
30	CB-9	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	T Floo Volu (ac
1	CB-10	3.20	2.38	N/A	N/A	N/A	6.55	474.33	0.33	0 00:17	0
2	CB-11	2.32	2.28	1.68	0.64	72.48	5.52	490.83	0.13	0 00:13	0
3	CB-12	2.94	2.94	1.93	1.01	65.53	6.01	492.04	0.15	0 00:16	0
4	CB-13	1.98	1.91	1.84	0.15	92.56	6.73	508.36	0.17	0 00:13	0
5	CB-14	5.66	4.15	N/A	N/A	N/A	11.46	513.71	0.46	0 00:14	0
6	CB-15	6.28	5.29	3.14	3.15	49.92	8.71	518.61	0.22	0 00:14	0
7	CB-16	1.61	1.61	1.43	0.19	88.46	5.25	519.83	0.13	0 00:09	0
8	CB-17	1.41	1.41	1.30	0.11	92.04	4.98	533.44	0.12	0 00:09	0
9	CB-18	3.36	3.30	2.25	1.12	66.74	6.89	535.16	0.17	0 00:14	0
10	CB-2	0.95	0.95	0.93	0.02	98.06	4.08	465.87	0.10	0 00:17	0
11	CB-20	3.23	3.23	N/A	N/A	N/A	7.89	516.25	0.37	0 00:17	0
12	CB-21	4.53	3.32	N/A	N/A	N/A	9.87	516.30	0.42	0 00:18	0
13	CB-22	4.78	4.78	3.54	1.24	74.00	7.46	517.15	0.18	0 00:19	0
14	CB-23	3.55	3.55	3.23	0.33	90.77	7.61	517.17	0.19	0 00:18	0
15	CB-25	4.29	4.29	N/A	N/A	N/A	9.52	535.70	0.41	0 00:07	0
16	CB-26	2.95	2.95	N/A	N/A	N/A	7.42	535.64	0.36	0 00:07	0
17	CB-28	1.65	1.54	1.54	0.11	93.55	5.88	542.79	0.14	0 00:17	0
18	CB-29	1.44	1.32	1.39	0.05	96.58	5.58	543.00	0.14	0 00:17	0
19	CB-30	1.80	1.80	1.65	0.16	91.35	6.06	548.05	0.15	0 00:16	0
20	CB-31	0.89	0.89	0.89	0.00	100.00	4.65	549.48	0.11	0 00:15	0
21	CB-32	1.03	1.03	1.03	0.00	100.00	4.91	549.99	0.12	0 00:15	0
22	CB-33	1.87	1.87	1.69	0.18	90.46	6.13	548.03	0.15	0 00:16	0
23	CB-37	1.37	1.16	1.23	0.14	89.84	4.67	490.80	0.11	0 00:10	0
24	CB-38	1.78	1.78	1.46	0.31	82.38	5.14	506.99	0.13	0 00:10	0
25	CB-40	3.35	3.35	2.13	1.22	63.67	6.50	524.96	0.16	0 00:09	0
26	CB-43	2.72	2.34	1.89	0.82	69.69	6.02	488.72	0.15	0 00:17	0
27	CB-44	2.31	1.96	1.72	0.59	74.58	5.66	507.14	0.14	0 00:09	0
28	CB-45	1.40	1.40	1.25	0.15	89.20	4.71	524.76	0.11	0 00:08	0
29	CB-51	3.09	2.81	2.04	1.05	65.99	6.34	465.98	0.16	0 00:17	0
30	CB-9	2.19	2.14	N/A	N/A	N/A	8.31	474.37	0.38	0 00:19	0

100 Year Design Storm

Project Description

File Name	HILLTOP 9-21-2026.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	33
Nodes	52
Junctions	13
Outfalls	9
Flow Diversions	0
Inlets	30
Storage Nodes	0
Links	67
Channels	22
Pipes	45
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	100 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-AD-49	4.59	0.7000	2.32	1.62	7.44	16.97	0 00:26:24
2	Sub-CB-10	0.54	0.7000	1.63	1.14	0.62	2.58	0 00:14:15
3	Sub-CB-11	0.44	0.7000	1.36	0.95	0.42	2.48	0 00:10:06
4	Sub-CB-12	0.70	0.7000	1.73	1.21	0.85	3.19	0 00:15:59
5	Sub-CB-13	0.37	0.7000	1.36	0.95	0.35	2.08	0 00:10:09
6	Sub-CB-14	0.87	0.7000	1.48	1.04	0.90	4.50	0 00:12:04
7	Sub-CB-15	1.24	0.7000	1.69	1.18	1.47	5.74	0 00:15:19
8	Sub-CB-16	0.30	0.7000	1.30	0.91	0.27	1.75	0 00:09:21
9	Sub-CB-17	0.25	0.7000	1.24	0.87	0.22	1.53	0 00:08:26
10	Sub-CB-18	0.76	0.7000	1.64	1.15	0.87	3.58	0 00:14:44
11	Sub-CB-2	0.15	0.7000	1.09	0.76	0.11	1.03	0 00:06:39
12	Sub-CB-20	0.61	0.7000	1.33	0.93	0.57	3.51	0 00:09:37
13	Sub-CB-21	0.81	0.7000	1.78	1.25	1.01	3.60	0 00:16:54
14	Sub-CB-22	1.23	0.7000	1.92	1.35	1.66	5.18	0 00:19:13
15	Sub-CB-23	0.85	0.7000	1.75	1.22	1.04	3.85	0 00:16:07
16	Sub-CB-25	0.66	0.7000	1.06	0.75	0.49	4.66	0 00:06:15
17	Sub-CB-26	0.41	0.7000	0.93	0.65	0.27	3.21	0 00:05:00
18	Sub-CB-28	0.35	0.7000	1.63	1.14	0.40	1.67	0 00:14:16
19	Sub-CB-29	0.32	0.7000	1.77	1.24	0.40	1.43	0 00:16:41
20	Sub-CB-30	0.44	0.7000	1.82	1.27	0.57	1.96	0 00:17:16
21	Sub-CB-31	0.28	0.5000	1.60	0.80	0.22	0.97	0 00:13:48
22	Sub-CB-32	0.24	0.7000	1.71	1.20	0.29	1.12	0 00:15:37
23	Sub-CB-33	0.45	0.7000	1.75	1.23	0.55	2.03	0 00:16:22
24	Sub-CB-37	0.27	0.7000	1.69	1.18	0.32	1.26	0 00:15:16
25	Sub-CB-38	0.38	0.7000	1.51	1.06	0.40	1.93	0 00:12:34
26	Sub-CB-40	0.63	0.7000	1.31	0.92	0.58	3.63	0 00:09:30
27	Sub-CB-43	0.57	0.7000	1.78	1.25	0.71	2.53	0 00:16:54
28	Sub-CB-44	0.48	0.7000	1.81	1.26	0.61	2.12	0 00:17:09
29	Sub-CB-45	0.24	0.7000	1.18	0.83	0.20	1.52	0 00:07:51
30	Sub-CB-51	0.76	0.7000	2.07	1.45	1.10	3.05	0 00:21:40
31	Sub-CB-9	0.54	0.7000	1.88	1.31	0.71	2.33	0 00:18:21
32	Sub-SDPIPE-35	0.16	0.7000	1.40	0.98	0.16	0.88	0 00:10:36
33	Sub-SDPIPE-36	1.73	0.7000	2.27	1.59	2.75	6.51	0 00:25:20

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	M Freeboa Attain (
1	AD-49	Junction	468.50	472.65	468.50	472.65	10.00	30.96	470.75	0.00	1.
2	CB-47	Junction	471.00	479.32	471.00	479.32	10.00	18.44	475.71	0.00	3.
3	CB-8	Junction	468.50	474.72	468.50	474.72	10.00	4.65	469.21	0.00	5.
4	JB	Junction	462.30	468.30	462.30	468.30	0.00	1.42	462.78	0.00	5.
5	JB-19	Junction	502.00	509.27	502.00	509.27	10.00	19.21	502.63	0.00	6.
6	JB-24	Junction	526.00	535.80	526.00	535.80	10.00	8.63	526.55	0.00	9.
7	JB-27	Junction	534.00	539.80	534.00	539.80	10.00	6.53	534.59	0.00	5.
8	JB-39	Junction	510.00	521.73	510.00	521.73	10.00	3.33	510.36	0.00	11.
9	JB-4	Junction	462.74	473.05	462.74	473.05	10.00	0.00	462.74	0.00	10.
10	JB-SDPIPE35	Junction	462.75	464.00	462.75	0.00	100.00	1.42	463.17	0.00	1.
11	JB-SDPIPE36	Junction	441.30	442.80	441.30	0.00	1000.00	6.51	442.52	0.00	0.
12	8-Jun	Junction	538.50	544.50	538.50	544.50	0.00	1.95	539.17	0.00	5.
13	WIER-6	Junction	468.00	472.50	468.00	472.50	10.00	0.00	468.00	0.00	4.
14	FES-1	Outfall	461.00					2.45	461.39		
15	FES-3	Outfall	538.50					1.84	539.01		
16	FES-36	Outfall	472.00					9.43	472.57		
17	FES-46	Outfall	468.25					30.96	469.77		
18	FES-48	Outfall	468.00					18.44	469.20		
19	FES-7	Outfall	468.00					4.65	468.56		
20	3-Jun	Outfall	0.00					0.02	0.02		
21	OUT-SDPIPE35	Outfall	462.25					1.39	462.50		
22	Out-SDPIPE-36	Outfall	441.00					6.50	441.94		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Fl Dep
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1	Link-05	Pipe	CB-16	CB-13	406.55	517.00	503.00	3.4400	18.000	0.0150	0.13	15.32	0.01	3.41	0.
2	Link-08	Pipe	JB-SDPIPE35	JB	30.00	462.75	462.25	1.6700	15.000	0.0120	1.41	8.57	0.16	3.58	0.
3	Link-30	Pipe	CB-51	JB-SDPIPE35	30.83	462.08	462.75	-2.1800	18.000	0.0150	1.24	28.73	0.04	5.12	0.
4	Link-33	Pipe	CB-2	FES-1	33.60	461.75	461.00	2.2300	24.000	0.0150	2.45	29.29	0.08	5.06	0.
5	Link-37	Pipe	JB	OUT-SDPIPE35	0.96	462.30	462.25	5.2100	15.000	0.0120	1.39	15.97	0.09	4.65	0.
6	Link-39	Pipe	8-Jun	FES-3	0.36	538.50	538.50	0.0000	18.000	0.0130	1.84	5.54	0.33	2.85	0.
7	L-SDPIPE-8	Pipe	CB-47	FES-48	70.00	471.00	468.00	4.2900	18.000	0.0150	18.44	18.85	0.98	11.00	1.
8	SDPIPE-10	Pipe	CB-13	CB-11	187.03	493.00	486.75	3.3400	18.000	0.0120	15.20	20.80	0.73	11.70	1.
9	SDPIPE-11	Pipe	CB-14	CB-13	66.59	502.00	498.50	5.2600	18.000	0.0130	13.85	24.08	0.58	11.84	0.
10	SDPIPE-12	Pipe	CB-15	CB-14	297.35	513.00	503.00	3.3600	18.000	0.0120	7.82	20.87	0.37	10.53	0.
11	SDPIPE-13	Pipe	CB-16	CB-15	64.00	514.00	513.00	1.5600	18.000	0.0130	4.50	13.13	0.34	5.78	0.
12	SDPIPE-14	Pipe	CB-17	CB-16	322.00	528.00	514.00	4.3500	18.000	0.0130	3.04	21.90	0.14	5.74	0.
13	SDPIPE-15	Pipe	CB-18	CB-17	42.43	529.00	528.00	2.3600	18.000	0.0130	2.43	16.13	0.15	6.11	0.
14	SDPIPE-16	Pipe	CB-20	JB-19	131.65	504.25	502.00	1.7100	24.000	0.0120	19.21	32.04	0.60	11.15	1.
15	SDPIPE-17	Pipe	CB-21	CB-20	32.94	508.50	508.00	1.5200	24.000	0.0120	18.60	30.19	0.62	7.82	1.
16	SDPIPE-18	Pipe	CB-22	CB-21	77.00	510.00	508.50	1.9500	18.000	0.0120	3.71	15.88	0.23	3.70	1.
17	SDPIPE-19	Pipe	CB-23	CB-21	75.59	509.50	508.50	1.3200	18.000	0.0120	3.34	13.09	0.26	3.02	1.
18	SDPIPE-2	Pipe	JB-4	CB-2	99.00	462.74	461.75	1.0000	24.000	0.0130	0.00	22.62	0.00	0.00	0.
19	SDPIPE-20	Pipe	JB-24	CB-21	256.11	526.00	508.50	6.8300	18.000	0.0120	8.62	29.75	0.29	7.70	1.
20	SDPIPE-21	Pipe	CB-25	JB-24	69.87	527.00	526.00	1.4300	18.000	0.0120	8.63	13.61	0.63	8.35	0.
21	SDPIPE-22	Pipe	CB-26	CB-25	33.08	530.50	527.00	10.5800	18.000	0.0130	1.77	34.17	0.05	2.29	0.
22	SDPIPE-23	Pipe	JB-27	CB-25	222.35	534.00	527.00	3.1500	18.000	0.0120	6.52	20.19	0.32	6.95	0.
23	SDPIPE-24	Pipe	CB-28	JB-27	73.59	537.00	534.00	4.0800	18.000	0.0130	6.53	21.21	0.31	9.31	0.
24	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	1.10	14.89	0.07	4.69	0.
25	SDPIPE-25 (1)	Pipe	CB-29	CB-28	44.82	537.50	537.00	1.1200	18.000	0.0130	4.99	11.09	0.45	5.50	0.
26	SDPIPE-25 (12)	Pipe	CB-43	CB-37	42.57	484.50	484.00	1.1700	18.000	0.0130	2.28	11.38	0.20	4.48	0.
27	SDPIPE-25 (13)	Pipe	CB-44	CB-38	33.23	496.00	494.50	4.5100	18.000	0.0130	2.34	22.32	0.10	5.96	0.
28	SDPIPE-25 (14)	Pipe	CB-45	JB-39	46.24	515.00	514.00	2.1600	18.000	0.0130	1.31	15.45	0.08	4.91	0.

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Fl Dep
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
46	Link-01	Channel	CB-30	CB-29	151.74	547.90	542.86	3.3200	3.960	0.0320	0.20	5.85	0.03	1.57	0.
47	Link-02	Channel	CB-28	CB-18	253.20	542.65	534.99	3.0300	3.960	0.0320	0.11	5.59	0.02	0.35	0.
48	Link-03	Channel	CB-18	CB-15	303.55	534.99	520.24	4.8600	3.960	0.0320	1.25	7.51	0.17	1.22	0.
49	Link-04	Channel	CB-15	CB-14	302.16	520.24	513.25	2.3100	3.960	0.0320	2.74	4.19	0.65	1.39	0.
50	Link-06	Channel	CB-13	CB-11	192.70	508.19	490.69	9.0800	3.960	0.0320	0.12	9.68	0.01	0.64	0.
51	Link-07	Channel	CB-12	CB-10	295.35	491.89	474.00	6.0600	3.960	0.0320	1.17	7.90	0.15	0.92	0.
52	Link-09	Channel	CB-17	CB-22	172.84	533.32	517.04	9.4200	3.960	0.0320	0.10	9.88	0.01	0.67	0.
53	Link-10	Channel	CB-22	CB-21	156.96	517.04	515.89	0.7300	3.960	0.0320	1.46	2.67	0.55	0.79	0.
54	Link-11	Channel	CB-23	CB-21	80.56	516.98	515.89	1.3500	3.960	0.0320	0.44	3.74	0.12	0.36	0.
55	Link-12	Channel	CB-45	CB-23	172.11	524.64	516.98	4.4500	3.960	0.0320	0.19	6.78	0.03	2.75	0.
56	Link-13	Channel	CB-40	CB-44	228.53	524.80	507.00	7.7900	3.960	0.0320	1.40	8.96	0.16	3.91	0.
57	Link-14	Channel	CB-44	CB-43	236.24	500.50	482.00	7.8300	3.960	0.0320	0.49	8.97	0.05	1.76	0.
58	Link-15	Channel	CB-38	CB-37	208.04	506.87	490.69	7.7800	3.960	0.0320	0.36	8.96	0.04	2.78	0.
59	Link-16	Channel	CB-37	CB-9	218.60	490.69	474.00	7.6400	3.960	0.0320	0.11	8.87	0.01	0.13	0.
60	Link-17	Channel	CB-43	CB-51	291.31	488.57	465.82	7.8100	3.960	0.0320	0.71	8.97	0.08	1.68	0.
61	Link-18	Channel	CB-10	CB-2	126.47	474.00	465.77	6.5100	3.960	0.0320	0.00	8.19	0.00	0.00	0.
62	Link-19	Channel	CB-33	CB-28	176.20	547.88	542.65	2.9700	3.960	0.0320	0.24	5.53	0.04	1.49	0.
63	Link-20	Channel	CB-11	CB-9	282.13	490.69	474.00	5.9200	3.960	0.0320	0.72	7.81	0.09	0.80	0.
64	Link-24	Channel	CB-29	CB-26	316.29	542.86	535.29	2.3900	3.960	0.0320	0.04	4.97	0.01	0.62	0.
65	Link-28	Channel	CB-32	3-Jun	204.60	549.87	0.00	268.7500	3.960	0.0320	0.02	52.65	0.00	4.51	0.
66	Link-38	Channel	CB-2	JB	44.72	465.77	462.30	7.7600	3.960	0.0320	0.04	8.95	0.00	0.08	0.
67	Link-40	Channel	CB-31	8-Jun	97.13	549.37	538.50	11.1900	3.960	0.0320	0.00	10.74	0.00	0.00	0.

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutt Sprea during Pea Flo (
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.43	474.00	469.43	10.00	3.54	N/A	N/A	N/A	8.50	8.8
2	CB-11	FHWA HEC-22 GENERIC	N/A	On Grade	1	481.00	490.69	481.00	N/A	2.56	1.78	0.78	69.65	8.50	5.7
3	CB-12	FHWA HEC-22 GENERIC	N/A	On Grade	1	485.50	491.89	485.50	N/A	3.19	2.02	1.17	63.20	8.50	6.2
4	CB-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	493.00	508.19	493.00	N/A	2.20	1.98	0.22	89.89	8.50	6.9
5	CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	502.00	513.25	502.00	10.00	6.25	N/A	N/A	N/A	8.50	12.2
6	CB-15	FHWA HEC-22 GENERIC	N/A	On Grade	1	513.00	518.39	513.00	N/A	6.90	3.29	3.60	47.77	8.50	8.9
7	CB-16	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.00	519.70	514.00	N/A	1.75	1.51	0.24	86.23	8.50	5.3
8	CB-17	FHWA HEC-22 GENERIC	N/A	On Grade	1	528.00	533.32	528.00	N/A	1.53	1.38	0.15	89.89	8.50	5.1
9	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	529.00	534.99	529.00	N/A	3.69	2.37	1.32	64.19	8.50	7.3
10	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	461.75	465.77	461.75	N/A	1.03	0.99	0.03	96.61	8.50	4.2
11	CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	504.25	515.89	504.25	10.00	3.51	N/A	N/A	N/A	8.50	8.3
12	CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	508.50	515.89	508.50	10.00	5.10	N/A	N/A	N/A	8.50	10.6
13	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	510.00	516.97	510.00	N/A	5.19	3.72	1.47	71.65	8.50	7.6
14	CB-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	509.50	516.98	509.50	N/A	3.85	3.41	0.44	88.55	8.50	7.8
15	CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	527.00	535.29	527.00	10.00	4.66	N/A	N/A	N/A	8.50	10.0
16	CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.50	535.29	530.50	10.00	3.21	N/A	N/A	N/A	8.50	7.8
17	CB-28	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.00	542.65	537.00	N/A	1.82	1.66	0.16	91.08	8.50	6.0
18	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.50	542.86	537.50	N/A	1.60	1.51	0.09	94.26	8.50	5.8
19	CB-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	543.50	547.90	543.50	N/A	1.96	1.74	0.21	89.17	8.50	6.2
20	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.97	0.97	0.00	100.00	8.50	4.1
21	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.87	546.00	N/A	1.12	1.12	0.00	99.80	8.50	5.0
22	CB-33	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.00	547.88	544.00	N/A	2.03	1.79	0.24	88.15	8.50	6.3
23	CB-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	478.50	490.69	478.50	N/A	1.51	1.32	0.19	87.09	8.50	4.8
24	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	494.50	506.87	494.50	N/A	1.93	1.54	0.39	79.95	8.50	5.3
25	CB-40	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.80	515.00	N/A	3.63	2.23	1.40	61.34	8.50	6.1
26	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.50	488.57	484.50	N/A	3.00	2.00	0.99	66.83	8.50	6.2
27	CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.00	507.00	496.00	N/A	2.58	1.84	0.75	71.13	8.50	5.9
28	CB-45	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.64	515.00	N/A	1.52	1.32	0.20	86.92	8.50	4.8

Subbasin Hydrology

Subbasin : Sub-AD-49

Input Data

Area (ac) 4.59
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	4.59	-	0.7
Composite Area & Weighted Runoff Coeff.	4.59		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.4	0	0
Flow Length (ft) :	299.3	0	0
Slope (%) :	8.53	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	24.81	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	184.58	0	0
Slope (%) :	14.79	0	0
Surface Type :	Woodland	Paved	Paved
Velocity (ft/sec) :	1.92	0	0
Computed Flow Time (min) :	1.6	0	0

Total TOC (min) 26.41

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.54
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	-	0.7
Composite Area & Weighted Runoff Coeff.	0.54		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	62.75	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	13.31	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	287	0	0
Slope (%) :	6.16	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.05	0	0
Computed Flow Time (min) :	0.95	0	0

Total TOC (min) 14.26

Subbasin : Sub-CB-11

Input Data

Area (ac) 0.44
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.44	-	0.7
Composite Area & Weighted Runoff Coeff.	0.44		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	87.01933392	0	0
Slope (%) :	4.23334562	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	9.71	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	144.6117952	0	0
Slope (%) :	9.33800334	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.21	0	0
Computed Flow Time (min) :	0.39	0	0

Total TOC (min) 10.10

Subbasin : Sub-CB-12

Input Data

Area (ac) 0.7
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.7	-	0.7
Composite Area & Weighted Runoff Coeff.	0.7		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	72.34441067	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	14.92	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	290.7440621	0	0
Slope (%) :	7.85301046	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	4.52	0	0
Computed Flow Time (min) :	1.07	0	0

Total TOC (min) 15.99

Subbasin : Sub-CB-13

Input Data

Area (ac) 0.37
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.37	-	0.7
Composite Area & Weighted Runoff Coeff.	0.37		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.99	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.72	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	326.6	0	0
Slope (%) :	3.5	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.8	0	0
Computed Flow Time (min) :	1.43	0	0

Total TOC (min) 10.16

Subbasin : Sub-CB-14

Input Data

Area (ac) 0.87
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.87	-	0.7
Composite Area & Weighted Runoff Coeff.	0.87		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	133.09	0	0
Slope (%) :	7.48	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	10.86	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.63	0	0
Slope (%) :	2.32	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.1	0	0
Computed Flow Time (min) :	1.21	0	0

Total TOC (min) 12.07

Subbasin : Sub-CB-15

Input Data

Area (ac) 1.24
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.24	-	0.7
Composite Area & Weighted Runoff Coeff.	1.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	129.63	0	0
Slope (%) :	3.84	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	13.89	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	369.75	0	0
Slope (%) :	4.45	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.29	0	0
Computed Flow Time (min) :	1.44	0	0

Total TOC (min) 15.32

Subbasin : Sub-CB-16

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.3	-	0.7
Composite Area & Weighted Runoff Coeff.	0.3		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	35.63	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.47	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	225.56	0	0
Slope (%) :	4.29	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.21	0	0
Computed Flow Time (min) :	0.89	0	0

Total TOC (min) 9.36

Subbasin : Sub-CB-17

Input Data

Area (ac) 0.25
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.25	-	0.7
Composite Area & Weighted Runoff Coeff.	0.25		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	30.83	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	7.54	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.33	0	0
Slope (%) :	4.052	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.09	0	0
Computed Flow Time (min) :	0.9	0	0

Total TOC (min) 8.44

Subbasin : Sub-CB-18

Input Data

Area (ac) 0.76
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.76	-	0.7
Composite Area & Weighted Runoff Coeff.	0.76		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	169.6828048	0	0
Slope (%) :	5.92476783	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	14.48	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	75.81153859	0	0
Slope (%) :	5.8473515	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.92	0	0
Computed Flow Time (min) :	0.26	0	0

Total TOC (min) 14.74

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.15
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	49.14	0	0
Slope (%) :	3.51	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.12	0	0
Computed Flow Time (min) :	6.63	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	7.8	0	0
Slope (%) :	7.9	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.71	0	0
Computed Flow Time (min) :	0.02	0	0

Total TOC (min) 6.65

Subbasin : Sub-CB-20

Input Data

Area (ac) 0.61
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.61	-	0.7
Composite Area & Weighted Runoff Coeff.	0.61		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.97	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.07	0	0
Computed Flow Time (min) :	8.72	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	228.24	0	0
Slope (%) :	4.33669128	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.23	0	0
Computed Flow Time (min) :	0.9	0	0

Total TOC (min) 9.62

Subbasin : Sub-CB-21

Input Data

Area (ac) 0.81
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.81	-	0.7
Composite Area & Weighted Runoff Coeff.	0.81		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	225.91	0	0
Slope (%) :	7.69	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	16.41	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	74	0	0
Slope (%) :	1.44	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.44	0	0
Computed Flow Time (min) :	0.51	0	0

Total TOC (min) 16.91

Subbasin : Sub-CB-22

Input Data

Area (ac) 1.23
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.23	-	0.7
Composite Area & Weighted Runoff Coeff.	1.23		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	227.07	0	0
Slope (%) :	5.59	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	18.71	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	150.89	0	0
Slope (%) :	5.73	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.52	0	0

Total TOC (min) 19.23

Subbasin : Sub-CB-23

Input Data

Area (ac) 0.85
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.85	-	0.7
Composite Area & Weighted Runoff Coeff.	0.85		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	226.71	0	0
Slope (%) :	8.51	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.24	0	0
Computed Flow Time (min) :	15.8	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	75.07	0	0
Slope (%) :	3.73	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.93	0	0
Computed Flow Time (min) :	0.32	0	0

Total TOC (min) 16.12

Subbasin : Sub-CB-25

Input Data

Area (ac) 0.66
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.7
Composite Area & Weighted Runoff Coeff.	0.66		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	36.69	0	0
Slope (%) :	3.98	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.12	0	0
Computed Flow Time (min) :	4.99	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	218	0	0
Slope (%) :	1.9995265	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.26	0	0

Total TOC (min) 6.25

Subbasin : Sub-CB-26

Input Data

Area (ac) 0.41
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.41	-	0.7
Composite Area & Weighted Runoff Coeff.	0.41		0.7

Time of Concentration

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	391.04	0	0
Slope (%) :	2.05	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.91	0	0
Computed Flow Time (min) :	2.24	0	0

Total TOC (min) 2.24

Subbasin : Sub-CB-28

Input Data

Area (ac) 0.35
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.35	-	0.7
Composite Area & Weighted Runoff Coeff.	0.35		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.21	0	0
Slope (%) :	1.57	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	13.8	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	96.33	0	0
Slope (%) :	2.66	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.32	0	0
Computed Flow Time (min) :	0.48	0	0

Total TOC (min) 14.28

Subbasin : Sub-CB-29

Input Data

Area (ac) 0.32
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	79.19359172	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.04	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	145.6546025	0	0
Slope (%) :	3.30814128	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.7	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 16.69

Subbasin : Sub-CB-30

Input Data

Area (ac) 0.44
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.44	-	0.7
Composite Area & Weighted Runoff Coeff.	0.44		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	80.06466793	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.18	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	204.4355599	0	0
Slope (%) :	2.37620836	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.13	0	0
Computed Flow Time (min) :	1.09	0	0

Total TOC (min) 17.27

Subbasin : Sub-CB-31

Input Data

Area (ac) 0.28
Weighted Runoff Coefficient 0.5

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.28	-	0.5
Composite Area & Weighted Runoff Coeff.	0.28		0.5

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	61.18415656	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	13.05	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	147.427748	0	0
Slope (%) :	2.48368186	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.2	0	0
Computed Flow Time (min) :	0.77	0	0

Total TOC (min) 13.81

Subbasin : Sub-CB-32

Input Data

Area (ac) 0.24
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	72.82652581	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	15	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	123.3068858	0	0
Slope (%) :	2.56696146	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.26	0	0
Computed Flow Time (min) :	0.63	0	0

Total TOC (min) 15.63

Subbasin : Sub-CB-33

Input Data

Area (ac) 0.45
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	-	0.7
Composite Area & Weighted Runoff Coeff.	0.45		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	74.8476514	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	15.33	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	205.0538871	0	0
Slope (%) :	2.54735015	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.24	0	0
Computed Flow Time (min) :	1.05	0	0

Total TOC (min) 16.38

Subbasin : Sub-CB-37

Input Data

Area (ac) 0.27
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	70.96	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	14.69	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	204.13	0	0
Slope (%) :	7.95	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.59	0	0

Total TOC (min) 15.28

Subbasin : Sub-CB-38

Input Data

Area (ac) 0.38
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	56.31288611	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	12.21	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	122.2285539	0	0
Slope (%) :	7.88883657	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.71	0	0
Computed Flow Time (min) :	0.36	0	0

Total TOC (min) 12.57

Subbasin : Sub-CB-40

Input Data

Area (ac) 0.63
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.63	-	0.7
Composite Area & Weighted Runoff Coeff.	0.63		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.47168729	0	0
Slope (%) :	4.83233018	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	8.82	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	225.6819013	0	0
Slope (%) :	7.22299665	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.46	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 9.51

Subbasin : Sub-CB-43

Input Data

Area (ac) 0.57
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.57	-	0.7
Composite Area & Weighted Runoff Coeff.	0.57		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	80.44365706	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.24	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	230.963887	0	0
Slope (%) :	7.93293268	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.67	0	0

Total TOC (min) 16.91

Subbasin : Sub-CB-44

Input Data

Area (ac)	0.48
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.48	-	0.7
Composite Area & Weighted Runoff Coeff.	0.48		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.23540495	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	16.53	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	215.6393568	0	0
Slope (%) :	7.93956492	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.63	0	0

Total TOC (min) 17.16

Subbasin : Sub-CB-45

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	26.67	0	0
Slope (%) :	0.84	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	7.2	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221	0	0
Slope (%) :	7.58	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.6	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 7.86

Subbasin : Sub-CB-51

Input Data

Area (ac)	0.76
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.76	-	0.7
Composite Area & Weighted Runoff Coeff.	0.76		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	109.87	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	20.84	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	284.96	0	0
Slope (%) :	7.93363114	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.73	0	0
Computed Flow Time (min) :	0.83	0	0

Total TOC (min) 21.67

Subbasin : Sub-CB-9

Input Data

Area (ac)	0.54
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	-	0.7
Composite Area & Weighted Runoff Coeff.	0.54		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	94.51887751	0	0
Slope (%) :	1.1562359	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	17.43	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	272.2215693	0	0
Slope (%) :	5.96622322	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.97	0	0
Computed Flow Time (min) :	0.91	0	0

Total TOC (min) 18.35

Subbasin : Sub-SDPIPE-35

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	117.01	0	0
Slope (%) :	6.14	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	10.61	0	0

Total TOC (min) 10.61

Subbasin : Sub-SDPIPE-36

Input Data

Area (ac)	1.73
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.73	-	0.7
Composite Area & Weighted Runoff Coeff.	1.73		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	299.51	0	0
Slope (%) :	6	0	0
2 yr, 24 hr Rainfall (in) :	4.34	0	0
Velocity (ft/sec) :	0.22	0	0
Computed Flow Time (min) :	22.7	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	546	0	0
Slope (%) :	5.3	0	0
Surface Type :	Grassed waterway	Unpaved	Unpaved
Velocity (ft/sec) :	3.45	0	0
Computed Flow Time (min) :	2.64	0	0

Total TOC (min) 25.34

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	AD-49	468.50	472.65	4.15	468.50	0.00	472.65	0.00	10.00	19.85
2	CB-47	471.00	479.32	8.32	471.00	0.00	479.32	0.00	10.00	81.81
3	CB-8	468.50	474.72	6.22	468.50	0.00	474.72	0.00	10.00	50.59
4	JB	462.30	468.30	6.00	462.30	0.00	468.30	0.00	0.00	57.00
5	JB-19	502.00	509.27	7.27	502.00	0.00	509.27	0.00	10.00	63.30
6	JB-24	526.00	535.80	9.80	526.00	0.00	535.80	0.00	10.00	99.54
7	JB-27	534.00	539.80	5.80	534.00	0.00	539.80	0.00	10.00	51.59
8	JB-39	510.00	521.73	11.73	510.00	0.00	521.73	0.00	10.00	74.75
9	JB-4	462.74	473.05	10.31	462.74	0.00	473.05	0.00	10.00	99.76
10	JB-SDPIPE35	462.75	464.00	1.25	462.75	0.00	0.00	-464.00	100.00	0.00
11	JB-SDPIPE36	441.30	442.80	1.50	441.30	0.00	0.00	-442.80	1000.00	0.00
12	8-Jun	538.50	544.50	6.00	538.50	0.00	544.50	0.00	0.00	54.00
13	WIER-6	468.00	472.50	4.50	468.00	0.00	472.50	0.00	10.00	30.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Oc (days
1	AD-49	30.96	16.97	470.75	2.25	0.00	1.91	468.59	0.09	0 00:19	
2	CB-47	18.44	0.00	475.71	4.71	0.00	3.61	471.05	0.05	0 00:10	
3	CB-8	4.65	0.00	469.21	0.71	0.00	5.51	468.52	0.02	0 00:19	
4	JB	1.42	0.00	462.78	0.48	0.00	5.52	462.32	0.02	0 00:17	
5	JB-19	19.21	0.00	502.63	0.63	0.00	6.65	502.02	0.02	0 00:17	
6	JB-24	8.63	0.00	526.55	0.55	0.00	9.24	526.02	0.02	0 00:07	
7	JB-27	6.53	0.00	534.59	0.59	0.00	5.21	534.02	0.02	0 00:17	
8	JB-39	3.33	0.00	510.36	0.36	0.00	11.37	510.01	0.01	0 00:09	
9	JB-4	0.00	0.00	462.74	0.00	0.00	10.31	462.74	0.00	0 00:00	
10	JB-SDPIPE35	1.42	0.88	463.17	0.42	0.00	1.08	462.76	0.01	0 00:17	
11	JB-SDPIPE36	6.51	6.51	442.52	1.22	0.00	0.28	441.34	0.04	0 00:25	
12	8-Jun	1.95	0.00	539.17	0.67	0.00	5.33	538.52	0.02	0 00:16	
13	WIER-6	0.00	0.00	468.00	0.00	0.00	4.50	468.00	0.00	0 00:00	

Channel Input

SN	Element ID	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Drop	Average Slope	Shape	Height	Width	Manning's Roughness	Er
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)		
1	Link-01	151.74	547.90	4.40	542.86	5.36	5.04	3.3200	User-Defined	0.330	14.000	0.0320	
2	Link-02	253.20	542.65	5.65	534.99	5.99	7.66	3.0300	User-Defined	0.330	14.000	0.0320	
3	Link-03	303.55	534.99	5.99	520.24	7.24	14.75	4.8600	User-Defined	0.330	14.000	0.0320	
4	Link-04	302.16	520.24	7.24	513.25	11.25	6.99	2.3100	User-Defined	0.330	14.000	0.0320	
5	Link-06	192.70	508.19	15.19	490.69	9.69	17.50	9.0800	User-Defined	0.330	14.000	0.0320	
6	Link-07	295.35	491.89	6.39	474.00	4.56	17.89	6.0600	User-Defined	0.330	14.000	0.0320	
7	Link-09	172.84	533.32	5.32	517.04	7.04	16.28	9.4200	User-Defined	0.330	14.000	0.0320	
8	Link-10	156.96	517.04	7.04	515.89	7.39	1.15	0.7300	User-Defined	0.330	14.000	0.0320	
9	Link-11	80.56	516.98	7.48	515.89	7.39	1.09	1.3500	User-Defined	0.330	14.000	0.0320	
10	Link-12	172.11	524.64	9.64	516.98	7.48	7.67	4.4500	User-Defined	0.330	14.000	0.0320	
11	Link-13	228.53	524.80	9.80	507.00	11.00	17.80	7.7900	User-Defined	0.330	14.000	0.0320	
12	Link-14	236.24	500.50	4.50	482.00	-2.50	18.50	7.8300	User-Defined	0.330	14.000	0.0320	
13	Link-15	208.04	506.87	12.37	490.69	12.19	16.18	7.7800	User-Defined	0.330	14.000	0.0320	
14	Link-16	218.60	490.69	12.19	474.00	4.90	16.69	7.6400	User-Defined	0.330	14.000	0.0320	
15	Link-17	291.31	488.57	4.07	465.82	3.74	22.75	7.8100	User-Defined	0.330	14.000	0.0320	
16	Link-18	126.47	474.00	4.56	465.77	4.02	8.23	6.5100	User-Defined	0.330	14.000	0.0320	
17	Link-19	176.20	547.88	3.88	542.65	5.65	5.23	2.9700	User-Defined	0.330	14.000	0.0320	
18	Link-20	282.13	490.69	9.69	474.00	4.90	16.70	5.9200	User-Defined	0.330	14.000	0.0320	
19	Link-24	316.29	542.86	5.36	535.29	4.79	7.57	2.3900	User-Defined	0.330	14.000	0.0320	
20	Link-28	204.60	549.87	3.87	0.00	0.00	549.87	268.7500	User-Defined	0.330	14.000	0.0320	
21	Link-38	44.72	465.77	4.02	462.30	0.00	3.47	7.7600	User-Defined	0.330	14.000	0.0320	
22	Link-40	97.13	549.37	4.87	538.50	0.00	10.87	11.1900	User-Defined	0.330	14.000	0.0320	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	Link-01	0.20	0 00:17	5.85	0.03	1.57	1.61	0.08	0.23	0.00	
2	Link-02	0.11	0 00:14	5.59	0.02	0.35	12.06	0.12	0.36	0.00	
3	Link-03	1.25	0 00:14	7.51	0.17	1.22	4.15	0.22	0.67	0.00	
4	Link-04	2.74	0 00:15	4.19	0.65	1.39	3.62	0.31	0.93	0.00	
5	Link-06	0.12	0 00:11	9.68	0.01	0.64	5.02	0.09	0.29	0.00	
6	Link-07	1.17	0 00:16	7.90	0.15	0.92	5.35	0.24	0.74	0.00	
7	Link-09	0.10	0 00:09	9.88	0.01	0.67	4.30	0.14	0.42	0.00	
8	Link-10	1.46	0 00:19	2.67	0.55	0.79	3.31	0.30	0.90	0.00	
9	Link-11	0.44	0 00:16	3.74	0.12	0.36	3.73	0.24	0.72	0.00	
10	Link-12	0.19	0 00:08	6.78	0.03	2.75	1.04	0.08	0.24	0.00	
11	Link-13	1.40	0 00:09	8.96	0.16	3.91	0.97	0.13	0.40	0.00	
12	Link-14	0.49	0 00:17	8.97	0.05	1.76	2.24	0.12	0.35	0.00	
13	Link-15	0.36	0 00:13	8.96	0.04	2.78	1.25	0.08	0.23	0.00	
14	Link-16	0.11	0 00:15	8.87	0.01	0.13	28.03	0.19	0.59	0.00	
15	Link-17	0.71	0 00:17	8.97	0.08	1.68	2.89	0.14	0.43	0.00	
16	Link-18	0.00	0 00:00	8.19	0.00	0.00		0.01	0.04	0.00	
17	Link-19	0.24	0 00:16	5.53	0.04	1.49	1.97	0.08	0.25	0.00	
18	Link-20	0.72	0 00:10	7.81	0.09	0.80	5.88	0.22	0.68	0.00	
19	Link-24	0.04	0 00:18	4.97	0.01	0.62	8.50	0.17	0.50	0.00	
20	Link-28	0.02	0 00:15	52.65	0.00	4.51	0.76	0.01	0.04	0.00	
21	Link-38	0.04	0 00:06	8.95	0.00	0.08	9.32	0.18	0.54	0.00	
22	Link-40	0.00	0 00:00	10.74	0.00	0.00		0.17	0.50	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Mar Roug
1	Link-05	406.55	517.00	3.00	503.00	10.00	14.00	3.4400	CIRCULAR	18.000	18.000	
2	Link-08	30.00	462.75	0.00	462.25	-0.05	0.50	1.6700	CIRCULAR	15.000	15.000	
3	Link-30	30.83	462.08	0.00	462.75	0.00	-0.67	-2.1800	CIRCULAR	18.000	18.000	
4	Link-33	33.60	461.75	0.00	461.00	0.00	0.75	2.2300	CIRCULAR	24.000	24.000	
5	Link-37	0.96	462.30	0.00	462.25	0.00	0.05	5.2100	CIRCULAR	15.000	15.000	
6	Link-39	0.36	538.50	0.00	538.50	0.00	0.00	0.0000	CIRCULAR	18.000	18.000	
7	L-SDPIPE-8	70.00	471.00	0.00	468.00	0.00	3.00	4.2900	CIRCULAR	18.000	18.000	
8	SDPIPE-10	187.03	493.00	0.00	486.75	5.75	6.25	3.3400	CIRCULAR	18.000	18.000	
9	SDPIPE-11	66.59	502.00	0.00	498.50	5.50	3.50	5.2600	CIRCULAR	18.000	18.000	
10	SDPIPE-12	297.35	513.00	0.00	503.00	1.00	10.00	3.3600	CIRCULAR	18.000	18.000	
11	SDPIPE-13	64.00	514.00	0.00	513.00	0.00	1.00	1.5600	CIRCULAR	18.000	18.000	
12	SDPIPE-14	322.00	528.00	0.00	514.00	0.00	14.00	4.3500	CIRCULAR	18.000	18.000	
13	SDPIPE-15	42.43	529.00	0.00	528.00	0.00	1.00	2.3600	CIRCULAR	18.000	18.000	
14	SDPIPE-16	131.65	504.25	0.00	502.00	0.00	2.25	1.7100	CIRCULAR	24.000	24.000	
15	SDPIPE-17	32.94	508.50	0.00	508.00	3.75	0.50	1.5200	CIRCULAR	24.000	24.000	
16	SDPIPE-18	77.00	510.00	0.00	508.50	0.00	1.50	1.9500	CIRCULAR	18.000	18.000	
17	SDPIPE-19	75.59	509.50	0.00	508.50	0.00	1.00	1.3200	CIRCULAR	18.000	18.000	
18	SDPIPE-2	99.00	462.74	0.00	461.75	0.00	0.99	1.0000	CIRCULAR	24.000	24.000	
19	SDPIPE-20	256.11	526.00	0.00	508.50	0.00	17.50	6.8300	CIRCULAR	18.000	18.000	
20	SDPIPE-21	69.87	527.00	0.00	526.00	0.00	1.00	1.4300	CIRCULAR	18.000	18.000	
21	SDPIPE-22	33.08	530.50	0.00	527.00	0.00	3.50	10.5800	CIRCULAR	18.000	18.000	
22	SDPIPE-23	222.35	534.00	0.00	527.00	0.00	7.00	3.1500	CIRCULAR	18.000	18.000	
23	SDPIPE-24	73.59	537.00	0.00	534.00	0.00	3.00	4.0800	CIRCULAR	18.000	18.000	
24	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	
25	SDPIPE-25 (1)	44.82	537.50	0.00	537.00	0.00	0.50	1.1200	CIRCULAR	18.000	18.000	
26	SDPIPE-25 (12)	42.57	484.50	0.00	484.00	5.50	0.50	1.1700	CIRCULAR	18.000	18.000	
27	SDPIPE-25 (13)	33.23	496.00	0.00	494.50	0.00	1.50	4.5100	CIRCULAR	18.000	18.000	
28	SDPIPE-25 (14)	46.24	515.00	0.00	514.00	4.00	1.00	2.1600	CIRCULAR	18.000	18.000	
29	SDPIPE-25 (15)	248.75	502.00	0.00	468.50	0.00	33.50	13.4700	CIRCULAR	24.000	24.000	
30	SDPIPE-25 (15) (1)	24.21	468.50	0.00	468.25	0.00	0.25	1.0300	CIRCULAR	30.000	30.000	
31	SDPIPE-25 (17)	32.91	462.08	0.00	461.75	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	
32	SDPIPE-25 (2)	150.25	543.50	0.00	537.50	0.00	6.00	3.9900	CIRCULAR	18.000	18.000	
33	SDPIPE-25 (3)	33.25	544.00	0.00	543.50	0.00	0.50	1.5000	CIRCULAR	18.000	18.000	
34	SDPIPE-25 (6)	87.00	478.50	0.00	472.00	0.00	6.50	7.4700	CIRCULAR	18.000	18.000	
35	SDPIPE-25 (7)	201.54	494.50	0.00	485.00	6.50	9.50	4.7100	CIRCULAR	18.000	18.000	
36	SDPIPE-25 (8)	196.25	510.00	0.00	498.00	3.50	12.00	6.1100	CIRCULAR	18.000	18.000	
37	SDPIPE-25 (9)	51.51	515.00	0.00	514.00	4.00	1.00	1.9400	CIRCULAR	18.000	18.000	
38	SDPIPE-32	95.98	544.50	0.00	538.50	0.00	6.00	6.2500	CIRCULAR	18.000	18.000	
39	SDPIPE-36	30.02	441.30	0.00	441.00	0.00	0.30	1.0000	CIRCULAR	18.000	18.000	
40	SDPIPE-4	112.76	468.00	0.00	462.74	0.00	5.26	4.6600	CIRCULAR	24.000	24.000	
41	SDPIPE-5	41.13	468.50	0.00	468.00	0.00	0.50	1.2200	CIRCULAR	24.000	24.000	
42	SDPIPE-6	55.12	469.10	0.00	468.50	0.00	0.60	1.0900	CIRCULAR	24.000	24.000	
43	SDPIPE-7	33.11	469.43	0.00	469.10	0.00	0.33	1.0100	CIRCULAR	24.000	24.000	
44	SDPIPE-8 (1)	127.57	481.00	0.00	471.00	0.00	10.00	7.8400	CIRCULAR	18.000	18.000	
45	SDPIPE-9	35.93	485.50	0.00	483.00	2.00	2.50	6.9600	CIRCULAR	18.000	18.000	

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Ti Surcharg
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(m
1	Link-05	0.13	0 00:11	15.32	0.01	3.41	1.99	0.08	0.06	0.
2	Link-08	1.41	0 00:17	8.57	0.16	3.58	0.14	0.45	0.36	0.
3	Link-30	1.24	0 00:21	28.73	0.04	5.12	0.10	0.29	0.20	0.
4	Link-33	2.45	0 00:17	29.29	0.08	5.06	0.11	0.42	0.21	0.
5	Link-37	1.39	0 00:17	15.97	0.09	4.65	0.00	0.37	0.29	0.
6	Link-39	1.84	0 00:16	5.54	0.33	2.85	0.00	0.59	0.39	0.
7	L-SDPIPE-8	18.44	0 00:13	18.85	0.98	11.00	0.11	1.35	0.90	0.
8	SDPIPE-10	15.20	0 00:13	20.80	0.73	11.70	0.27	1.03	0.69	0.
9	SDPIPE-11	13.85	0 00:14	24.08	0.58	11.84	0.09	0.94	0.63	0.
10	SDPIPE-12	7.82	0 00:14	20.87	0.37	10.53	0.47	0.66	0.44	0.
11	SDPIPE-13	4.50	0 00:10	13.13	0.34	5.78	0.18	0.68	0.46	0.
12	SDPIPE-14	3.04	0 00:09	21.90	0.14	5.74	0.93	0.55	0.36	0.
13	SDPIPE-15	2.43	0 00:14	16.13	0.15	6.11	0.12	0.42	0.28	0.
14	SDPIPE-16	19.21	0 00:17	32.04	0.60	11.15	0.20	1.08	0.54	0.
15	SDPIPE-17	18.60	0 00:18	30.19	0.62	7.82	0.07	1.42	0.71	0.
16	SDPIPE-18	3.71	0 00:19	15.88	0.23	3.70	0.35	1.00	0.66	0.
17	SDPIPE-19	3.34	0 00:16	13.09	0.26	3.02	0.42	1.13	0.75	0.
18	SDPIPE-2	0.00	0 00:00	22.62	0.00	0.00		0.23	0.11	0.
19	SDPIPE-20	8.62	0 00:07	29.75	0.29	7.70	0.55	1.00	0.67	0.
20	SDPIPE-21	8.63	0 00:07	13.61	0.63	8.35	0.14	0.85	0.57	0.
21	SDPIPE-22	1.77	0 00:07	34.17	0.05	2.29	0.24	0.69	0.46	0.
22	SDPIPE-23	6.52	0 00:17	20.19	0.32	6.95	0.53	0.79	0.52	0.
23	SDPIPE-24	6.53	0 00:17	21.21	0.31	9.31	0.13	0.63	0.42	0.
24	SDPIPE-25	1.10	0 00:15	14.89	0.07	4.69	0.27	0.29	0.19	0.
25	SDPIPE-25 (1)	4.99	0 00:17	11.09	0.45	5.50	0.14	0.77	0.51	0.
26	SDPIPE-25 (12)	2.28	0 00:17	11.38	0.20	4.48	0.16	0.50	0.33	0.
27	SDPIPE-25 (13)	2.34	0 00:09	22.32	0.10	5.96	0.09	0.47	0.32	0.
28	SDPIPE-25 (14)	1.31	0 00:08	15.45	0.08	4.91	0.16	0.31	0.21	0.
29	SDPIPE-25 (15)	19.21	0 00:17	89.94	0.21	8.78	0.47	1.31	0.66	0.
30	SDPIPE-25 (15) (1)	30.96	0 00:19	45.15	0.69	7.80	0.05	1.88	0.75	0.
31	SDPIPE-25 (17)	2.45	0 00:17	10.50	0.23	4.48	0.12	0.52	0.35	0.
32	SDPIPE-25 (2)	3.46	0 00:16	22.74	0.15	4.91	0.51	0.63	0.42	0.
33	SDPIPE-25 (3)	1.78	0 00:16	12.88	0.14	4.39	0.13	0.42	0.28	0.
34	SDPIPE-25 (6)	9.43	0 00:10	31.10	0.30	13.72	0.11	0.62	0.41	0.
35	SDPIPE-25 (7)	6.95	0 00:10	24.71	0.28	11.42	0.29	0.56	0.38	0.
36	SDPIPE-25 (8)	3.33	0 00:09	28.14	0.12	10.35	0.32	0.36	0.24	0.
37	SDPIPE-25 (9)	2.22	0 00:09	14.64	0.15	5.41	0.16	0.42	0.28	0.
38	SDPIPE-32	1.95	0 00:14	26.26	0.07	5.14	0.31	0.47	0.31	0.
39	SDPIPE-36	6.50	0 00:25	9.10	0.71	4.79	0.10	1.08	0.72	0.
40	SDPIPE-4	0.00	0 00:00	48.86	0.00	0.00		0.00	0.00	0.
41	SDPIPE-5	4.65	0 00:19	27.02	0.17	5.43	0.13	0.63	0.32	0.
42	SDPIPE-6	4.65	0 00:19	25.54	0.18	4.66	0.20	0.71	0.35	0.
43	SDPIPE-7	3.24	0 00:16	22.70	0.14	3.55	0.16	0.68	0.34	0.
44	SDPIPE-8 (1)	18.44	0 00:13	31.86	0.58	11.91	0.18	1.23	0.82	0.

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.43	474.00	4.56	469.43	0.00
2	CB-11	FHWA HEC-22 GENERIC	N/A	On Grade	1	481.00	490.69	9.69	481.00	0.00
3	CB-12	FHWA HEC-22 GENERIC	N/A	On Grade	1	485.50	491.89	6.39	485.50	0.00
4	CB-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	493.00	508.19	15.19	493.00	0.00
5	CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	502.00	513.25	11.25	502.00	0.00
6	CB-15	FHWA HEC-22 GENERIC	N/A	On Grade	1	513.00	518.39	5.39	513.00	0.00
7	CB-16	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.00	519.70	5.70	514.00	0.00
8	CB-17	FHWA HEC-22 GENERIC	N/A	On Grade	1	528.00	533.32	5.32	528.00	0.00
9	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	529.00	534.99	5.99	529.00	0.00
10	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	461.75	465.77	4.02	461.75	0.00
11	CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	504.25	515.89	11.64	504.25	0.00
12	CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	508.50	515.89	7.39	508.50	0.00
13	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	510.00	516.97	6.97	510.00	0.00
14	CB-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	509.50	516.98	7.48	509.50	0.00
15	CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	527.00	535.29	8.29	527.00	0.00
16	CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.50	535.29	4.79	530.50	0.00
17	CB-28	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.00	542.65	5.65	537.00	0.00
18	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	537.50	542.86	5.36	537.50	0.00
19	CB-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	543.50	547.90	4.40	543.50	0.00
20	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0.00
21	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.87	3.87	546.00	0.00
22	CB-33	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.00	547.88	3.88	544.00	0.00
23	CB-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	478.50	490.69	12.19	478.50	0.00
24	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	494.50	506.87	12.37	494.50	0.00
25	CB-40	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.80	9.80	515.00	0.00
26	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	484.50	488.57	4.07	484.50	0.00
27	CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	496.00	507.00	11.00	496.00	0.00
28	CB-45	FHWA HEC-22 GENERIC	N/A	On Grade	1	515.00	524.64	9.64	515.00	0.00
29	CB-51	FHWA HEC-22 GENERIC	N/A	On Grade	1	462.08	465.82	3.74	462.08	0.00
30	CB-9	FHWA HEC-22 GENERIC	N/A	On Sag	1	469.10	474.00	4.90	469.10	0.00

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
2	CB-11	0.0935	0.0254	0.0150	0.0200	1.00	0.1312	8.50
3	CB-12	0.0935	0.0254	0.0150	0.0200	1.00	0.1312	8.50
4	CB-13	0.0232	0.0254	0.0150	0.0200	1.00	0.1312	8.50
5	CB-14	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
6	CB-15	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
7	CB-16	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
8	CB-17	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
9	CB-18	0.0591	0.0254	0.0150	0.0200	1.00	0.1312	8.50
10	CB-2	0.0788	0.0254	0.0150	0.0200	1.00	0.1312	8.50
11	CB-20	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
12	CB-21	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
13	CB-22	0.0780	0.0254	0.0150	0.0200	1.00	0.1312	8.50
14	CB-23	0.0381	0.0254	0.0150	0.0200	1.00	0.1312	8.50
15	CB-25	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
16	CB-26	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50
17	CB-28	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
18	CB-29	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
19	CB-30	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
20	CB-31	0.0351	0.0254	0.0150	0.0200	1.00	0.1312	8.50
21	CB-32	0.0351	0.0254	0.0150	0.0200	1.00	0.1312	8.50
22	CB-33	0.0336	0.0254	0.0150	0.0200	1.00	0.1312	8.50
23	CB-37	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
24	CB-38	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
25	CB-40	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
26	CB-43	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
27	CB-44	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
28	CB-45	0.0794	0.0254	0.0150	0.0200	1.00	0.1312	8.50
29	CB-51	0.0788	0.0254	0.0150	0.0200	1.00	0.1312	8.50
30	CB-9	N/A	0.0254	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	T Floo Volu (ac
1	CB-10	3.54	2.58	N/A	N/A	N/A	8.84	474.39	0.39	0 00:17	0
2	CB-11	2.56	2.48	1.78	0.78	69.65	5.70	490.83	0.14	0 00:13	0
3	CB-12	3.19	3.19	2.02	1.17	63.20	6.20	492.04	0.15	0 00:16	0
4	CB-13	2.20	2.08	1.98	0.22	89.89	6.99	508.36	0.17	0 00:13	0
5	CB-14	6.25	4.50	N/A	N/A	N/A	12.25	513.73	0.48	0 00:14	0
6	CB-15	6.90	5.74	3.29	3.60	47.77	8.98	518.61	0.22	0 00:14	0
7	CB-16	1.75	1.75	1.51	0.24	86.23	5.38	519.83	0.13	0 00:09	0
8	CB-17	1.53	1.53	1.38	0.15	89.89	5.14	533.44	0.13	0 00:09	0
9	CB-18	3.69	3.58	2.37	1.32	64.19	7.10	535.17	0.17	0 00:14	0
10	CB-2	1.03	1.03	0.99	0.03	96.61	4.21	465.87	0.10	0 00:17	0
11	CB-20	3.51	3.51	N/A	N/A	N/A	8.34	516.26	0.38	0 00:17	0
12	CB-21	5.10	3.60	N/A	N/A	N/A	10.69	516.32	0.44	0 00:18	0
13	CB-22	5.19	5.18	3.72	1.47	71.65	7.66	517.16	0.19	0 00:19	0
14	CB-23	3.85	3.85	3.41	0.44	88.55	7.85	517.17	0.19	0 00:18	0
15	CB-25	4.66	4.66	N/A	N/A	N/A	10.06	535.71	0.42	0 00:07	0
16	CB-26	3.21	3.21	N/A	N/A	N/A	7.86	535.66	0.37	0 00:07	0
17	CB-28	1.82	1.67	1.66	0.16	91.08	6.08	542.80	0.15	0 00:17	0
18	CB-29	1.60	1.43	1.51	0.09	94.26	5.81	543.00	0.14	0 00:17	0
19	CB-30	1.96	1.96	1.74	0.21	89.17	6.25	548.06	0.15	0 00:16	0
20	CB-31	0.97	0.97	0.97	0.00	100.00	4.77	549.48	0.12	0 00:14	0
21	CB-32	1.12	1.12	1.12	0.00	99.80	5.03	549.99	0.12	0 00:15	0
22	CB-33	2.03	2.03	1.79	0.24	88.15	6.35	548.03	0.16	0 00:16	0
23	CB-37	1.51	1.26	1.32	0.19	87.09	4.84	490.81	0.12	0 00:10	0
24	CB-38	1.93	1.93	1.54	0.39	79.95	5.30	507.00	0.13	0 00:10	0
25	CB-40	3.63	3.63	2.23	1.40	61.34	6.70	524.97	0.16	0 00:09	0
26	CB-43	3.00	2.53	2.00	0.99	66.83	6.24	488.72	0.15	0 00:17	0
27	CB-44	2.58	2.12	1.84	0.75	71.13	5.92	507.14	0.15	0 00:09	0
28	CB-45	1.52	1.52	1.32	0.20	86.92	4.85	524.76	0.12	0 00:08	0
29	CB-51	3.39	3.05	2.15	1.24	63.40	6.53	465.98	0.16	0 00:17	0
30	CB-9	2.39	2.32	N/A	N/A	N/A	8.80	474.39	0.39	0 00:19	0

Detention Pond Outlet Schematics

Pond No. 1 : Hilltop Detention Pond

Pond Designer

Report | Help

Estimate Storage > Create Pond > **Add Outlet Structures**

Table | Structure | Plan / Profile | Stage vs. Q | Stage vs. Drain Time | Trial Route | Help

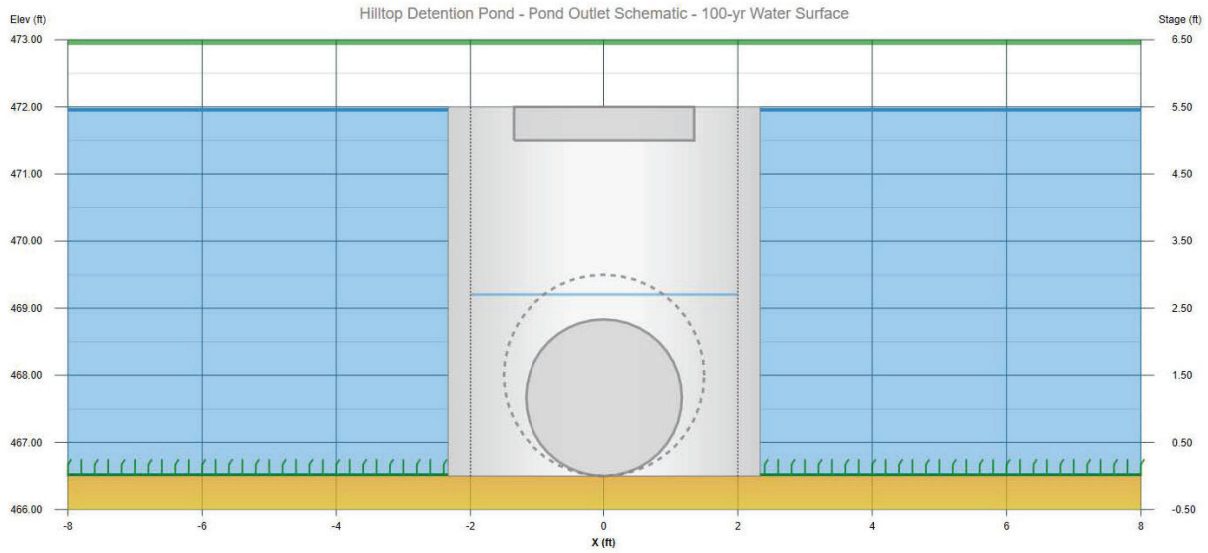
Target Qs | Struct HG | Ext Det | Flow Path

Culvert	Riser	Orifice	Weir
Exfiltration	User	Perf Riser	Tailwater

Primary Culvert	Input
Outlet Structure =	Culvert
Shape =	Circular
Diameter (in) =	36
No. Barrels =	1
Invert Elev. (ft) =	466.50
Orifice Coeff. (Co) =	0.6
Length (ft) =	113.00
Barrel Slope (%) =	4.66
N-Value (n) =	0.013
Restrictor (optional)	None
Active =	☑

Auto | Add/Update

Freq (Yr)	Q Targ (cfs)	Q Act (cfs)	Max Ele (ft)	Max Stor (cuft)
2	23.14	22.88	469.66	34,545
10	31.02	28.55	470.64	48,637
25	35.65	31.55	471.22	57,532
50	38.98	33.90	471.63	64,167
100	42.33	37.69	471.98	69,992



Click on a structure to select. Double-click to resize.

Numerical Output

Detention Pond Storage Estimate

Pond Designer

Report | Help

Estimate Storage* > Create Pond > Add Outlet Structures

1-Yr | 2-Yr | 3-Yr | 5-Yr | 10-Yr | 25-Yr | 50-Yr | 100-Yr

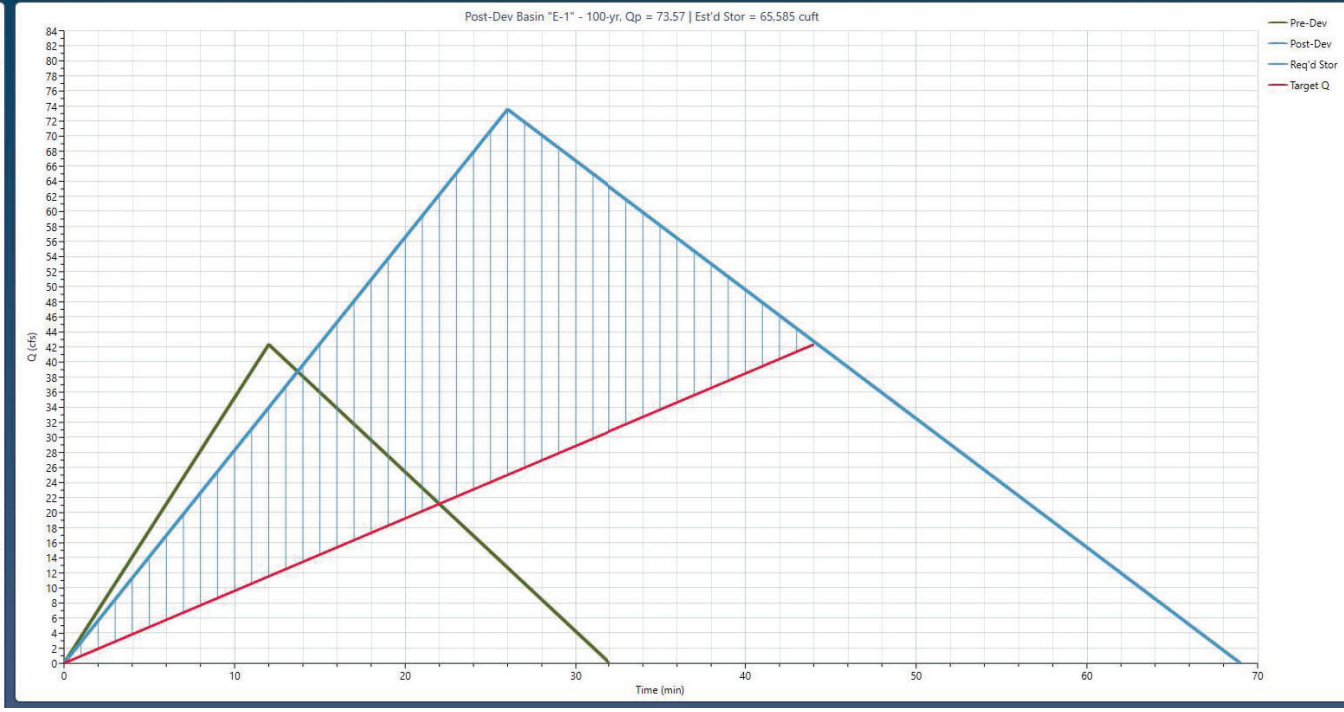
Post-dev Hyd = 13 - Rational - Post-Dev Basin "E-1"

Pre-dev Hyd = 5 - Rational - Pre-Dev Basin "E-1"

Freq (Yr)	Vol Pre (cuft)	Vol Post (cuft)	Qp Post (cfs)	Q Targ (cfs)	Req Stor (cuft)
1					
2	22,242	83,525	40.11	23.14	35,625
3					
5					
10	29,819	112,236	53.89	31.02	48,025
25	34,268	129,045	61.96	35.65	55,250
50	37,472	141,251	67.82	38.98	60,562
100	40,692	153,208	73.57	42.33	65,585

Clear | Estimate Storage

	Extended Detention Storage (optional)	
Zone	Description	Volume (cuft)
1	WQv	
2	CPv	
3	Custom	
4	Custom	

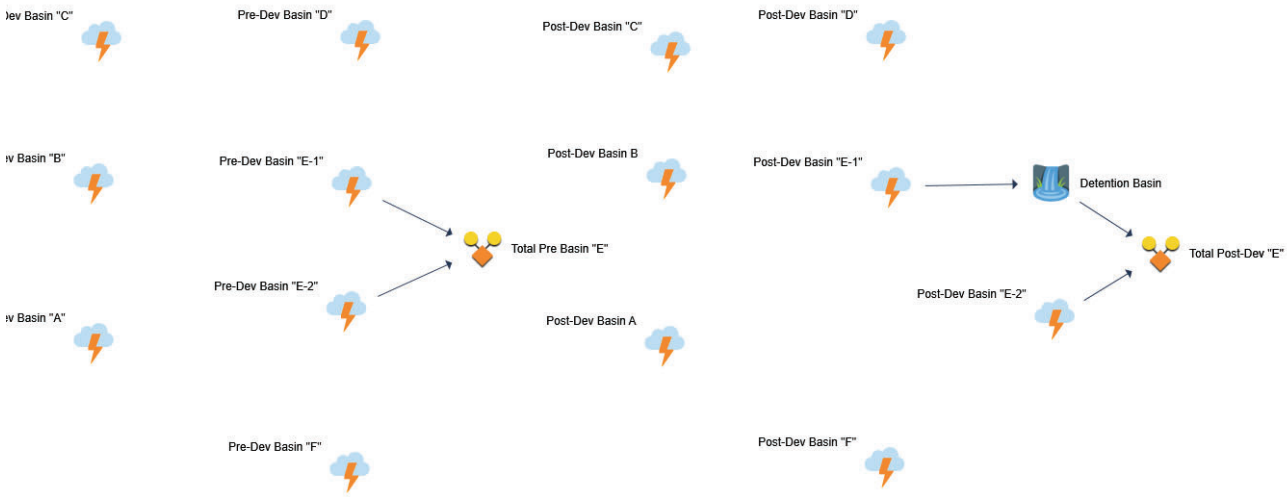


Pre and Post Development Hydrographs (Hydrology Studio)

Basin Model

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026



Hydrograph by Return Period

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	Rational	Pre-Dev Basin "A"		8.527			11.43	13.13	14.36	15.60
2	Rational	Pre-Dev Basin "B"		28.63			38.41	44.15	48.29	52.42
3	Rational	Pre-Dev Basin "C"		16.17			21.67	24.90	27.23	29.57
4	Rational	Pre-Dev Basin "D"		7.322			9.804	11.26	12.31	13.38
5	Rational	Pre-Dev Basin "E-1"		23.14			31.02	35.65	38.98	42.33
6	Rational	Pre-Dev Basin "E-2"		39.29			52.69	60.55	66.22	71.90
7	Junction	Total Pre Basin "E"		61.27			82.16	94.42	103.3	112.1
8	Rational	Pre-Dev Basin "F"		24.68			33.12	38.07	41.64	45.20
9	Rational	Post-Dev Basin A		8.085			10.85	12.47	13.64	14.80
10	Rational	Post-Dev Basin B		22.11			29.69	34.13	37.35	40.52
11	Rational	Post-Dev Basin "C"		16.54			22.16	25.47	27.85	30.24
12	Rational	Post-Dev Basin "D"		7.200			9.641	11.08	12.11	13.15
13	Rational	Post-Dev Basin "E-1"		40.11			53.89	61.96	67.82	73.57
14	Pond Route	Detention Basin		22.88			28.55	31.55	33.90	37.69
15	Rational	Post-Dev Basin "E-2"		35.39			47.46	54.55	59.65	64.77
16	Junction	Total Post-Dev "E"		38.95			52.67	60.76	66.71	72.60
17	Rational	Post-Dev Basin "F"		23.59			31.65	36.38	39.79	43.19

Hydrograph 2-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	8.527	0.18	7,513	----		
2	Rational	Pre-Dev Basin "B"	28.63	0.25	34,400	----		
3	Rational	Pre-Dev Basin "C"	16.17	0.18	14,247	----		
4	Rational	Pre-Dev Basin "D"	7.322	0.13	4,692	----		
5	Rational	Pre-Dev Basin "E-1"	23.14	0.20	22,242	----		
6	Rational	Pre-Dev Basin "E-2"	39.29	0.22	40,914	----		
7	Junction	Total Pre Basin "E"	61.27	0.22	62,291	5, 6		
8	Rational	Pre-Dev Basin "F"	24.68	0.28	33,601	----		
9	Rational	Post-Dev Basin A	8.085	0.25	9,714	----		
10	Rational	Post-Dev Basin B	22.11	0.35	37,188	----		
11	Rational	Post-Dev Basin "C"	16.54	0.18	14,570	----		
12	Rational	Post-Dev Basin "D"	7.200	0.13	4,614	----		
13	Rational	Post-Dev Basin "E-1"	40.11	0.43	83,525	----		
14	Pond Route	Detention Basin	22.88	0.73	82,999	13	469.66	34,545
15	Rational	Post-Dev Basin "E-2"	35.39	0.22	36,857	----		
16	Junction	Total Post-Dev "E"	38.95	0.22	119,102	14, 15		
17	Rational	Post-Dev Basin "F"	23.59	0.27	30,229	----		

Hydrograph Report

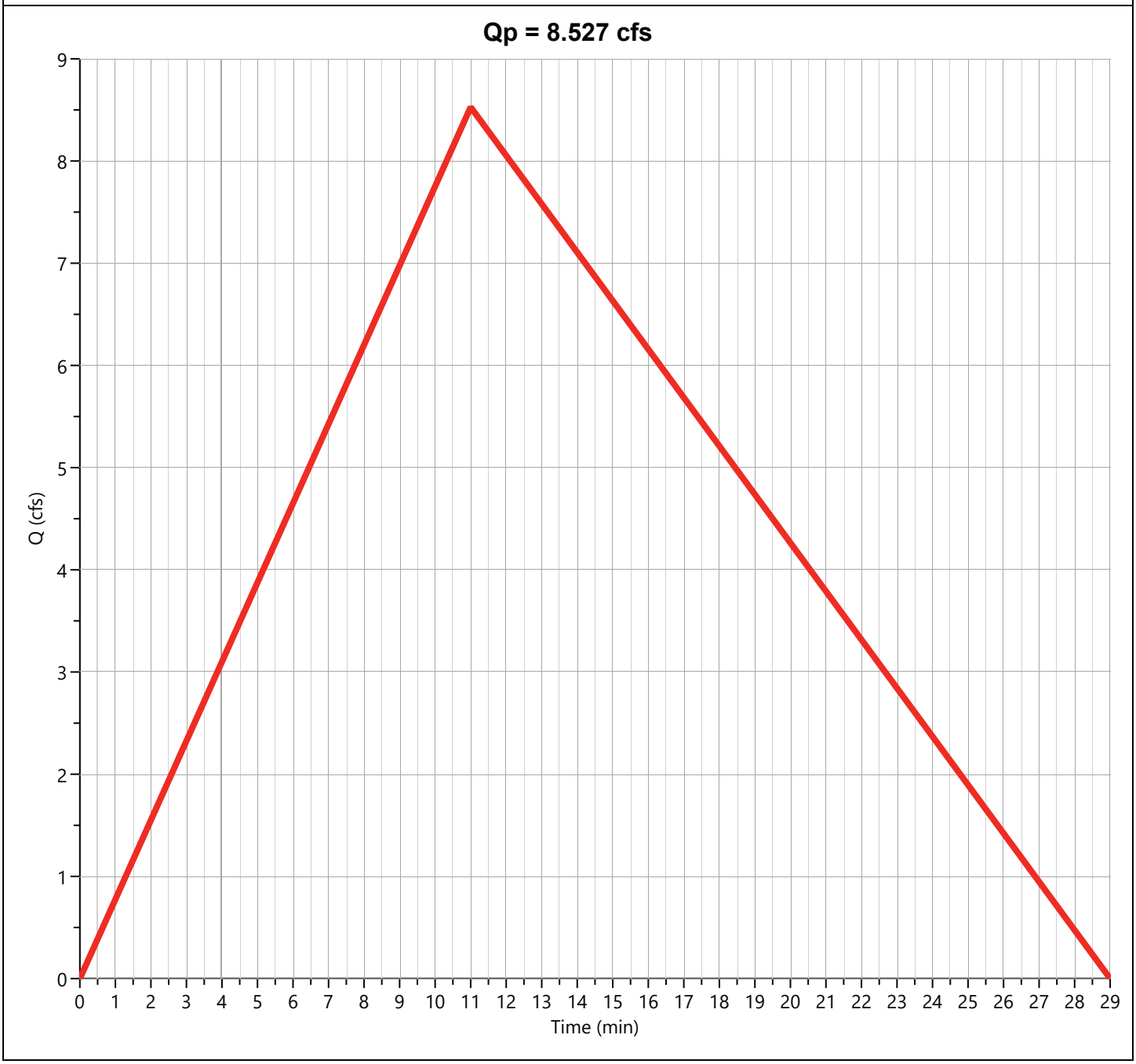
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 8.527 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 7,513 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "A"
Rational

Hyd. No. 1

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	6			
Travel Time (min)	**9.43**	**0.00**	**0.00**	**9.43**
Shallow Concentrated Flow				
Flow Length (ft)	509			
Watercourse Slope (%)	8.35	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.66			
Travel Time (min)	**1.82**	**0.00**	**0.00**	**1.82**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Hydrograph Report

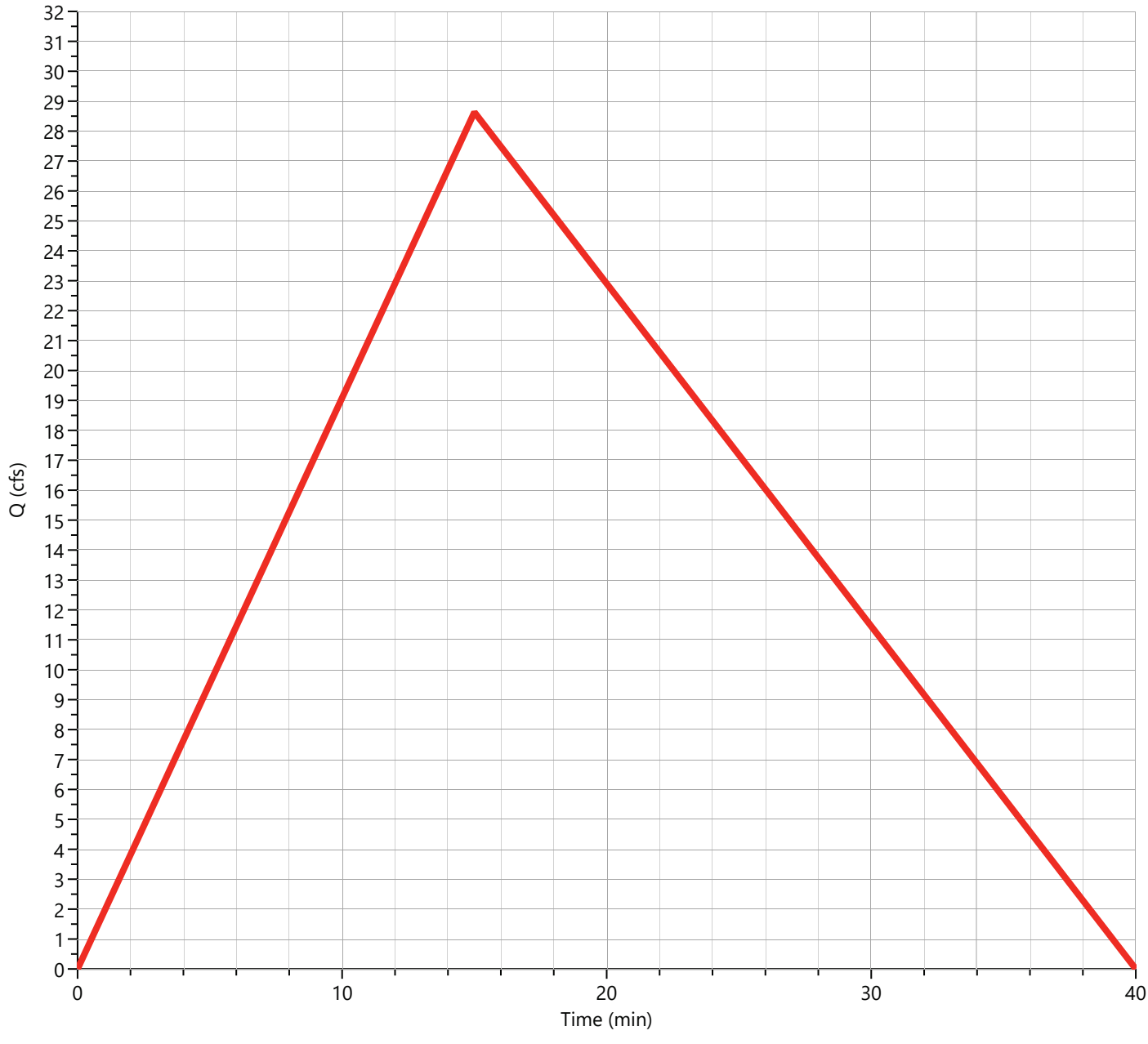
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 28.63 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 34,400 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.74 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "B"
Rational

Hyd. No. 2

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	4			
Travel Time (min)	**11.09**	**0.00**	**0.00**	**11.09**
Shallow Concentrated Flow				
Flow Length (ft)	926			
Watercourse Slope (%)	5.90	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.92			
Travel Time (min)	**3.94**	**0.00**	**0.00**	**3.94**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**15 min**

Hydrograph Report

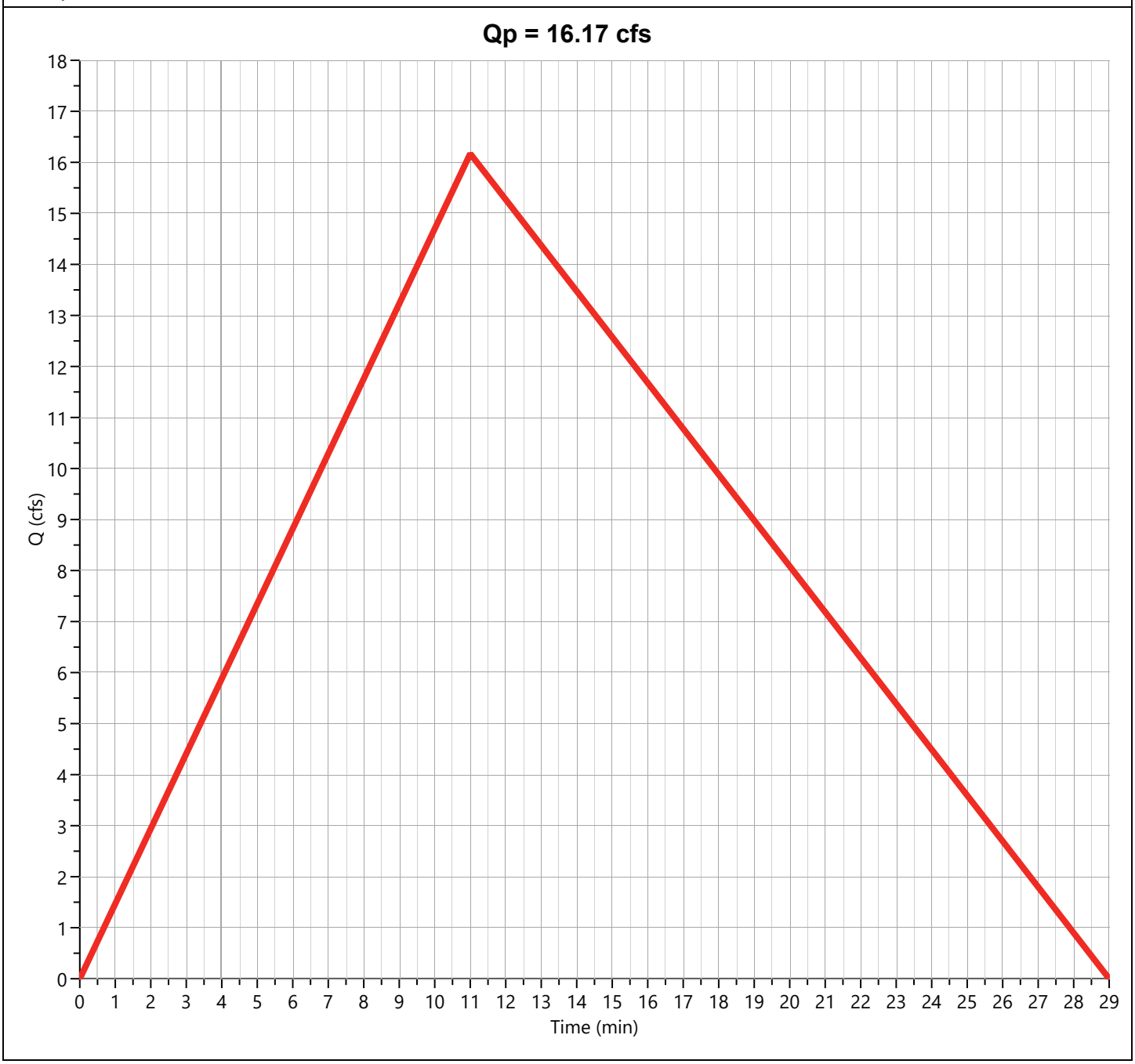
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 16.17 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 14,247 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "C"
Rational

Hyd. No. 3

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	8			
Travel Time (min)	**8.40**	**0.00**	**0.00**	**8.40**
Shallow Concentrated Flow				
Flow Length (ft)	654	71		
Watercourse Slope (%)	5.68	6.20	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.85	5.06		
Travel Time (min)	**2.83**	**0.23**	**0.00**	**3.07**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Hydrograph Report

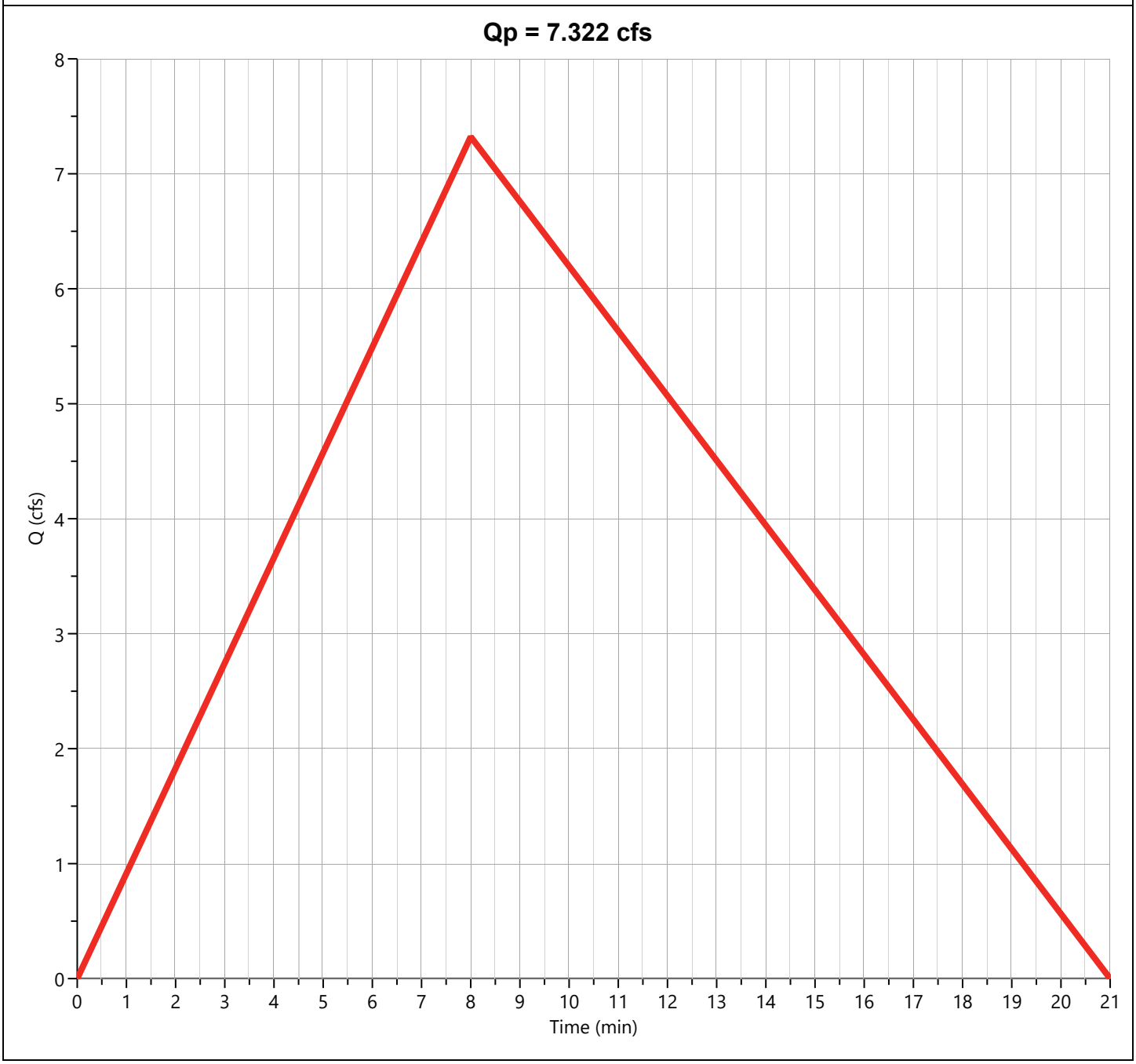
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 7.322 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 4,692 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "D"
Rational

Hyd. No. 4

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	14			
Travel Time (min)	**6.72**	**0.00**	**0.00**	**6.72**
Shallow Concentrated Flow				
Flow Length (ft)	554			
Watercourse Slope (%)	11.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.35			
Travel Time (min)	**1.73**	**0.00**	**0.00**	**1.73**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**8 min**

Hydrograph Report

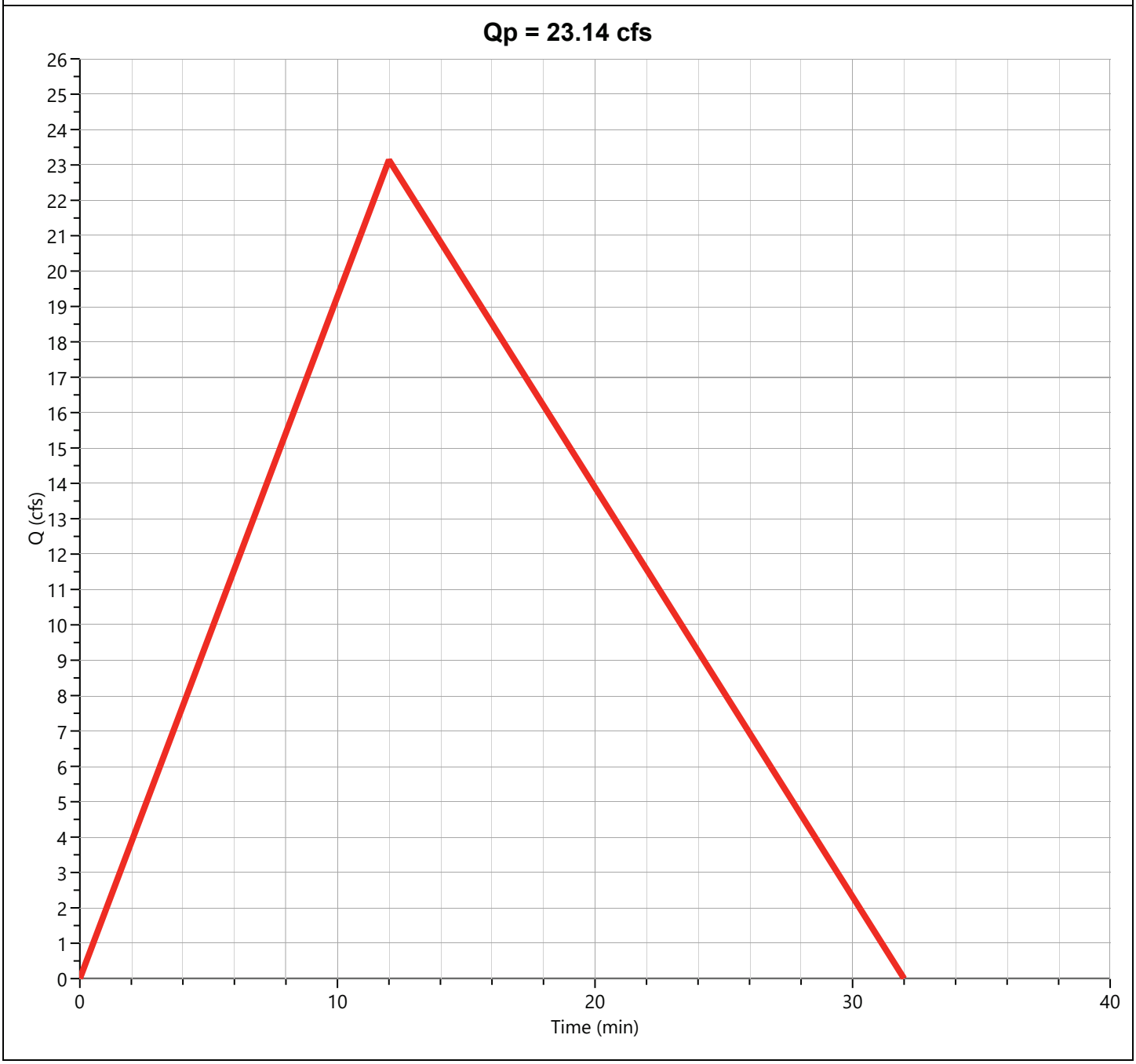
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 23.14 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 22,242 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.13 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "E-1"
Rational

Hyd. No. 5

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	**10.14**	**0.00**	**0.00**	**10.14**
Shallow Concentrated Flow				
Flow Length (ft)	565			
Watercourse Slope (%)	13.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.82			
Travel Time (min)	**1.62**	**0.00**	**0.00**	**1.62**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**12 min**

Hydrograph Report

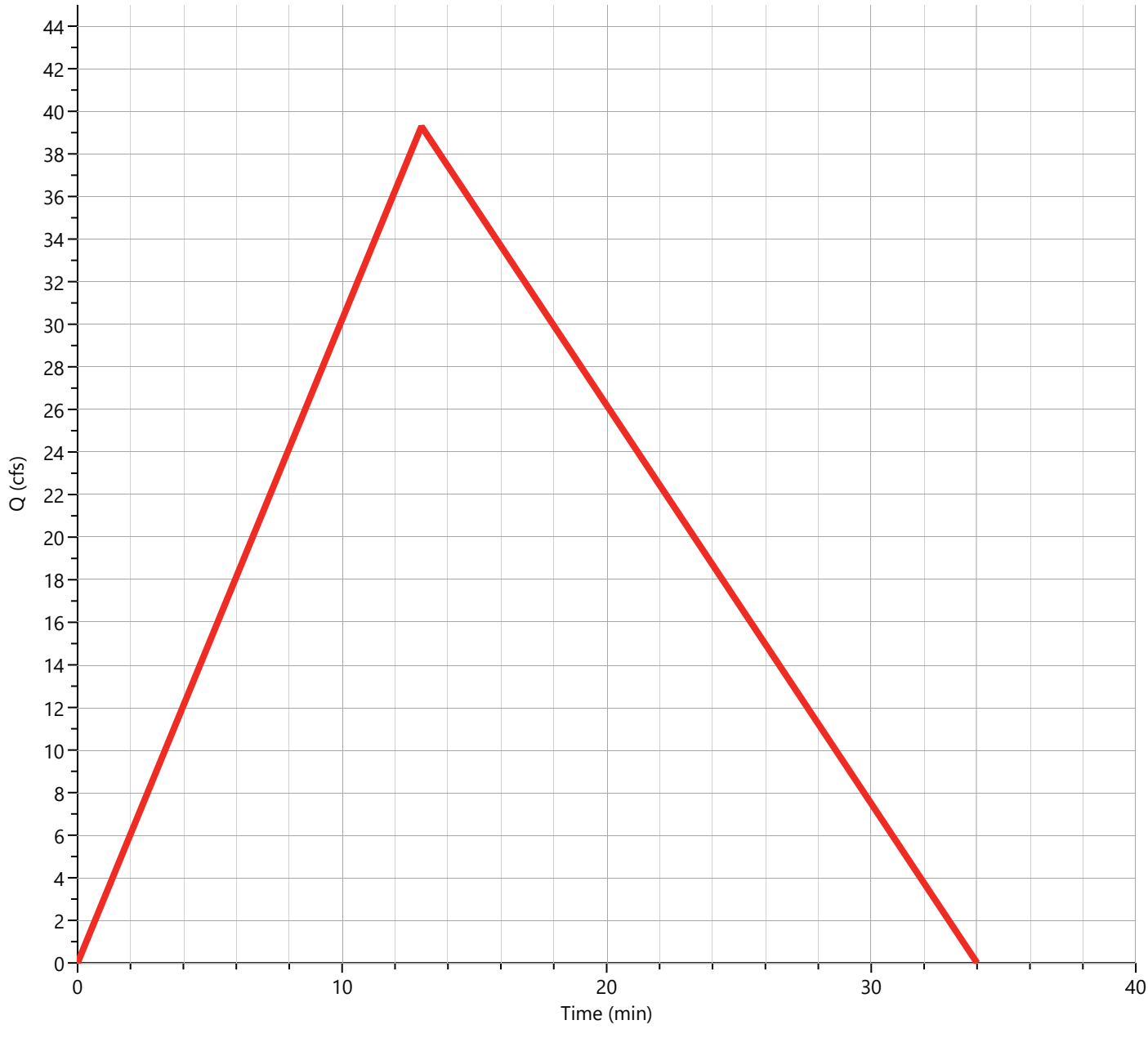
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 39.29 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 40,914 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.99 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "E-2"
Rational

Hyd. No. 6

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	7.25			
Travel Time (min)	**8.74**	**0.00**	**0.00**	**8.74**
Shallow Concentrated Flow				
Flow Length (ft)	1070			
Watercourse Slope (%)	6.23	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.03			
Travel Time (min)	**4.43**	**0.00**	**0.00**	**4.43**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13 min**

Hydrograph Report

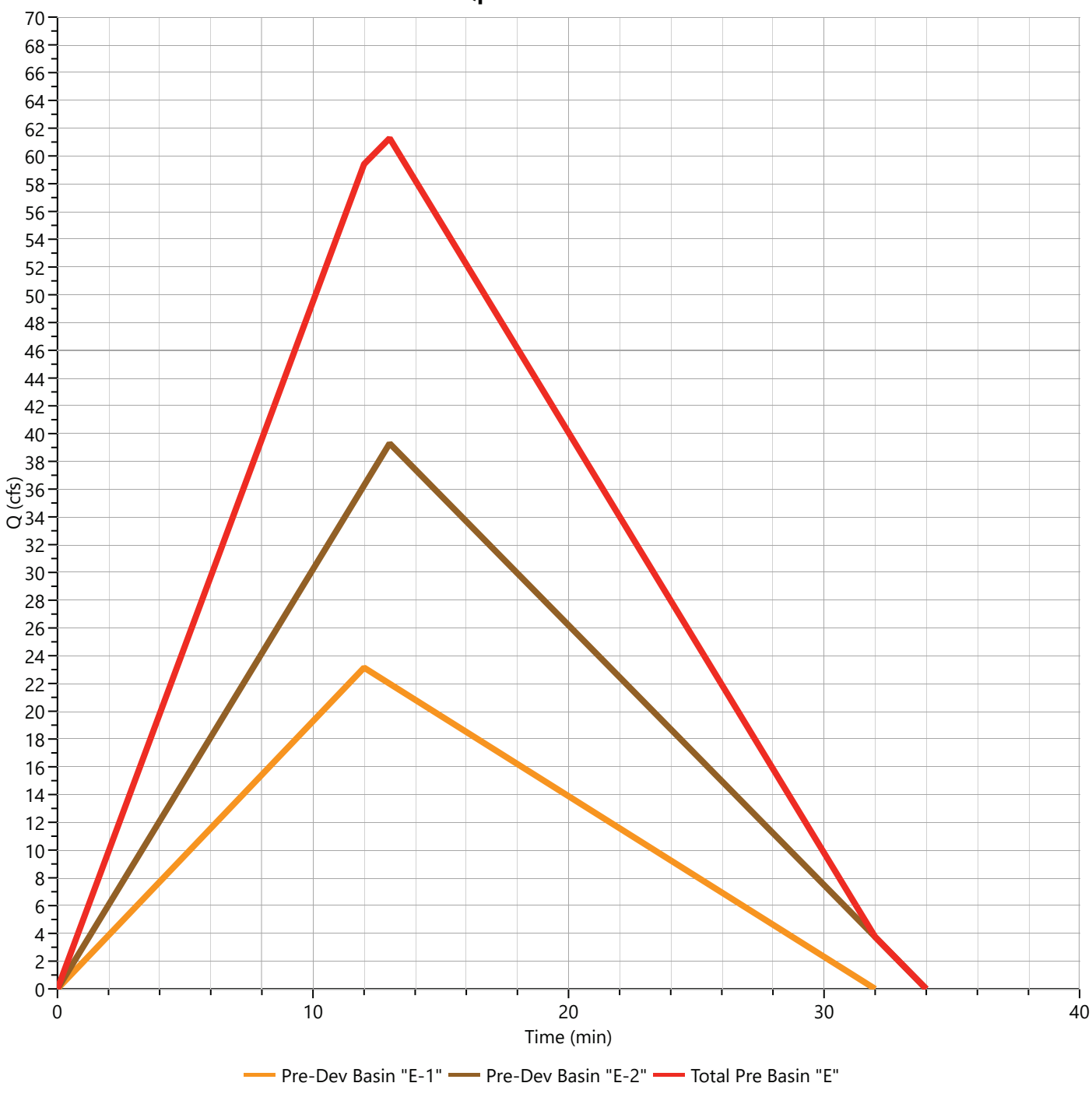
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Pre Basin "E"

Hyd. No. 7

Hydrograph Type	= Junction	Peak Flow	= 61.27 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 62,291 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Hydrograph Report

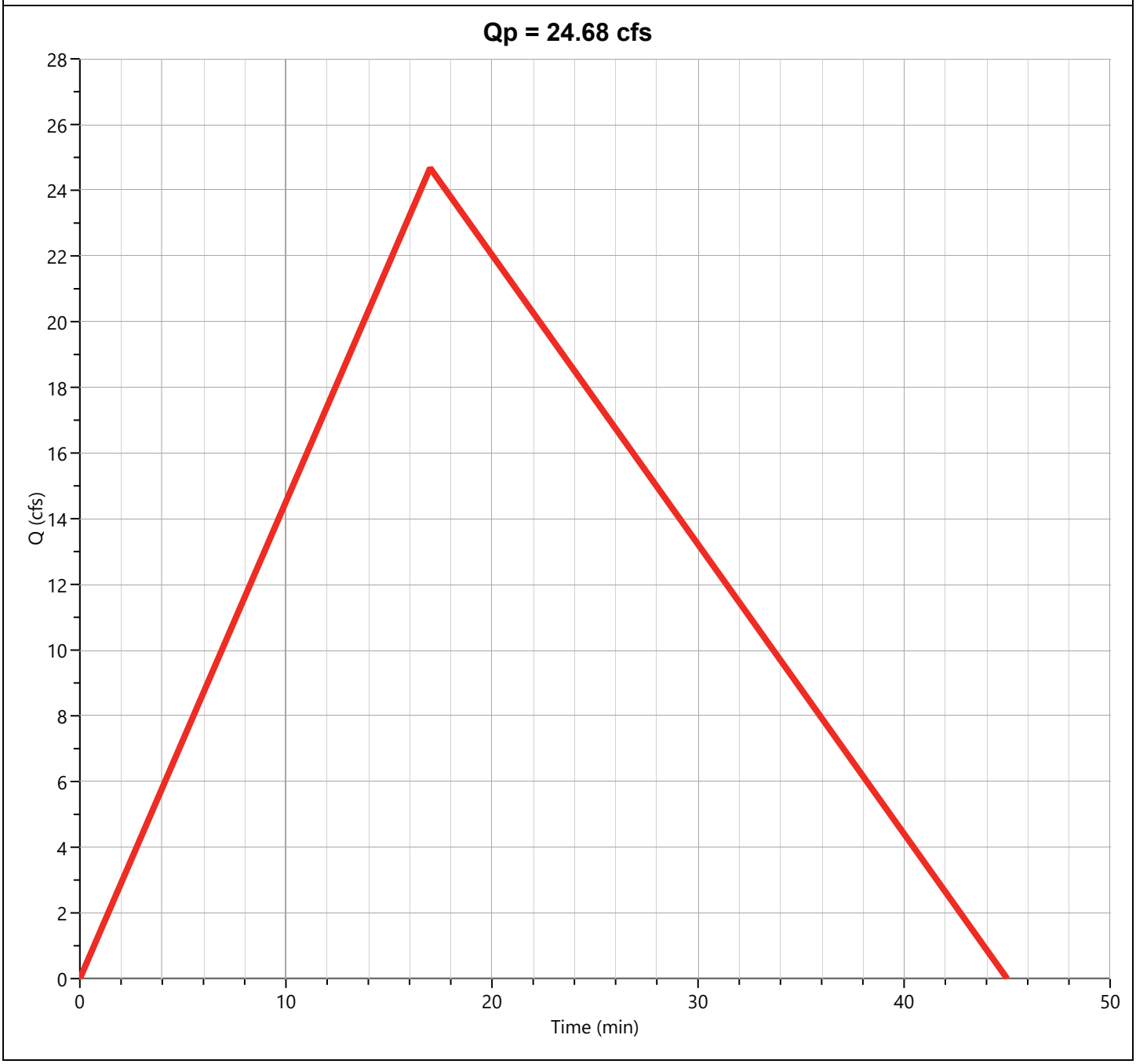
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 24.68 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 33,601 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.53 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Pre-Dev Basin "F"
Rational

Hyd. No. 8

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	**10.14**	**0.00**	**0.00**	**10.14**
Shallow Concentrated Flow				
Flow Length (ft)	1477			
Watercourse Slope (%)	4.90	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.57			
Travel Time (min)	**6.89**	**0.00**	**0.00**	**6.89**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**17 min**

Hydrograph Report

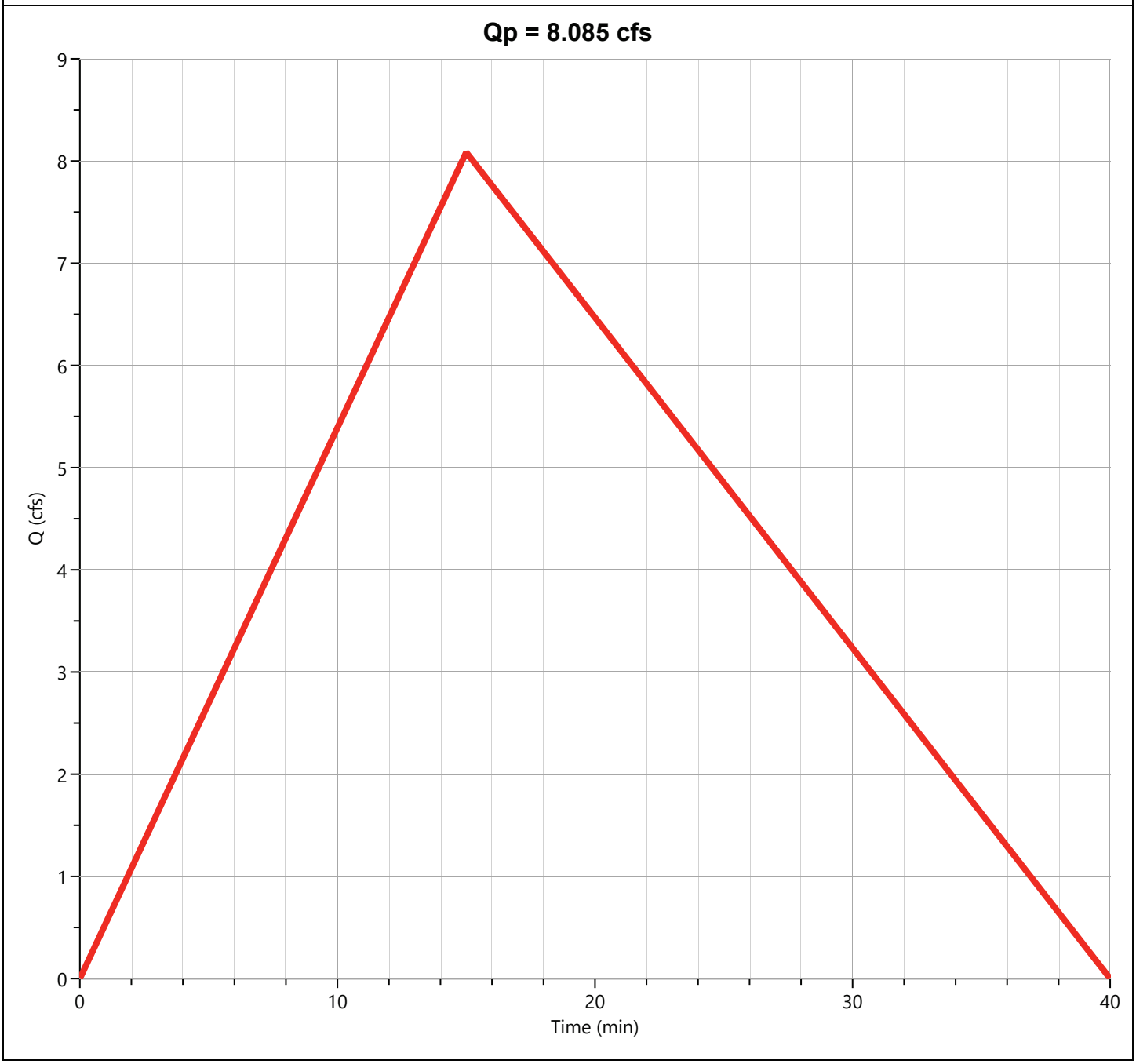
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 8.085 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 9,714 cuft
Drainage Area	= 3.33 ac	Runoff Coeff.	= 0.65
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.74 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin A
Rational

Hyd. No. 9

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	2.5			
Travel Time (min)	**13.38**	**0.00**	**0.00**	**13.38**
Shallow Concentrated Flow				
Flow Length (ft)	519			
Watercourse Slope (%)	7.80	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.51			
Travel Time (min)	**1.92**	**0.00**	**0.00**	**1.92**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**15 min**

Hydrograph Report

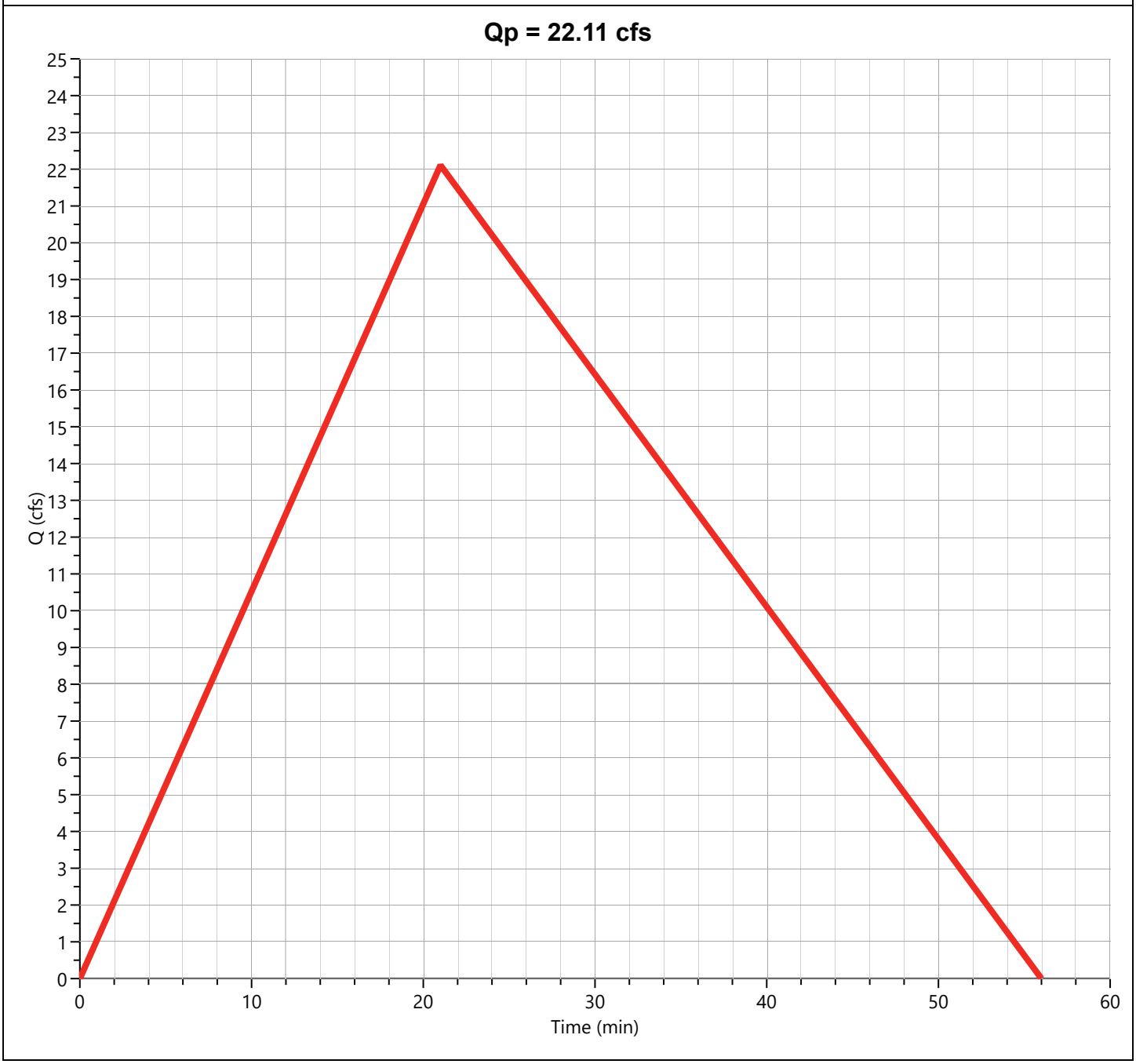
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 22.11 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Runoff Volume	= 37,188 cuft
Drainage Area	= 12.53 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 21.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.21 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin B
Rational

Hyd. No. 10

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	1.5			
Travel Time (min)	**16.42**	**0.00**	**0.00**	**16.42**
Shallow Concentrated Flow				
Flow Length (ft)	1025			
Watercourse Slope (%)	5.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.61			
Travel Time (min)	**4.73**	**0.00**	**0.00**	**4.73**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**21 min**

Hydrograph Report

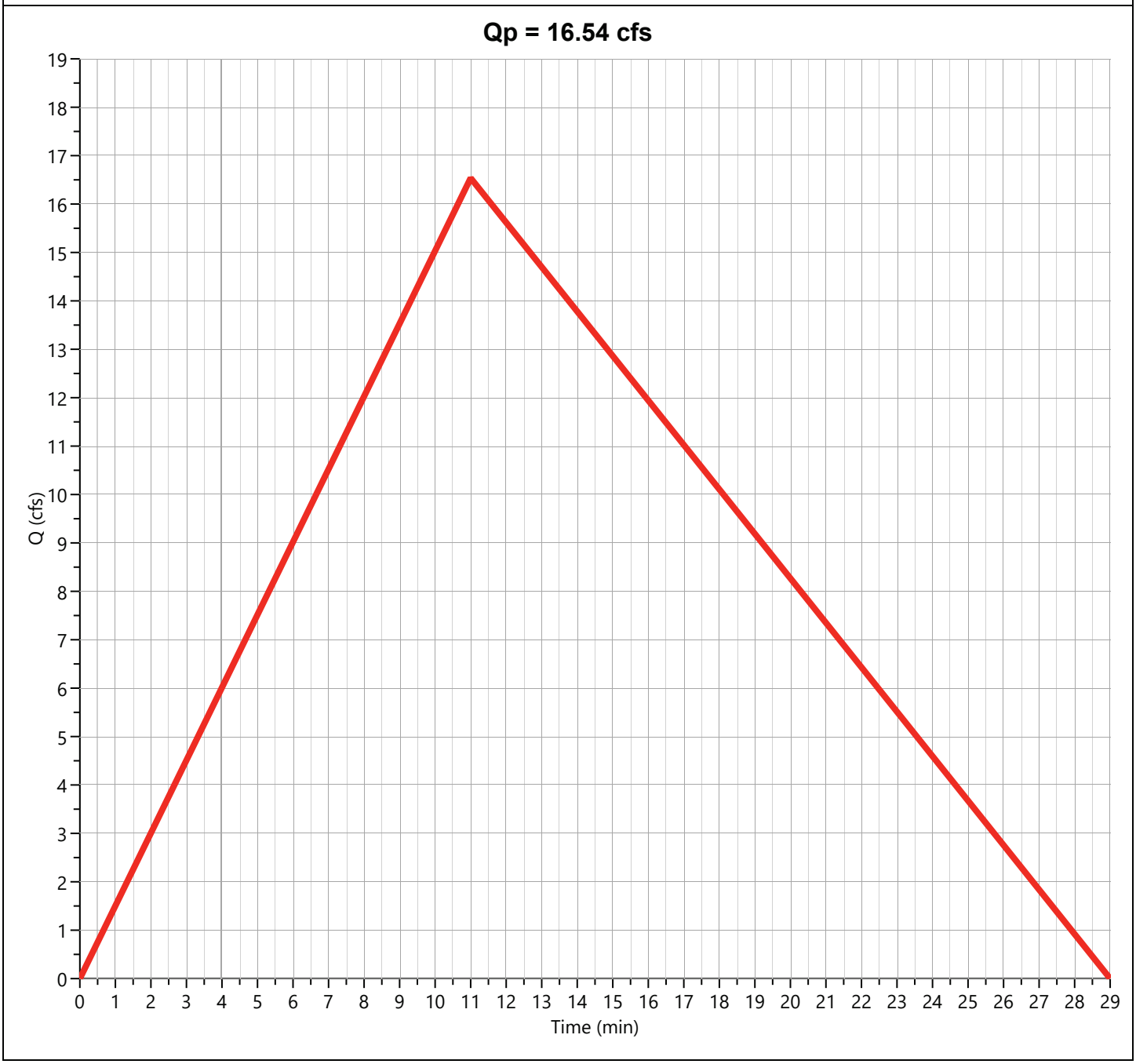
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 16.54 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 14,570 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin "C"
Rational

Hyd. No. 11

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	8			
Travel Time (min)	**8.40**	**0.00**	**0.00**	**8.40**
Shallow Concentrated Flow				
Flow Length (ft)	654			
Watercourse Slope (%)	5.68	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.85			
Travel Time (min)	**2.83**	**0.00**	**0.00**	**2.83**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Hydrograph Report

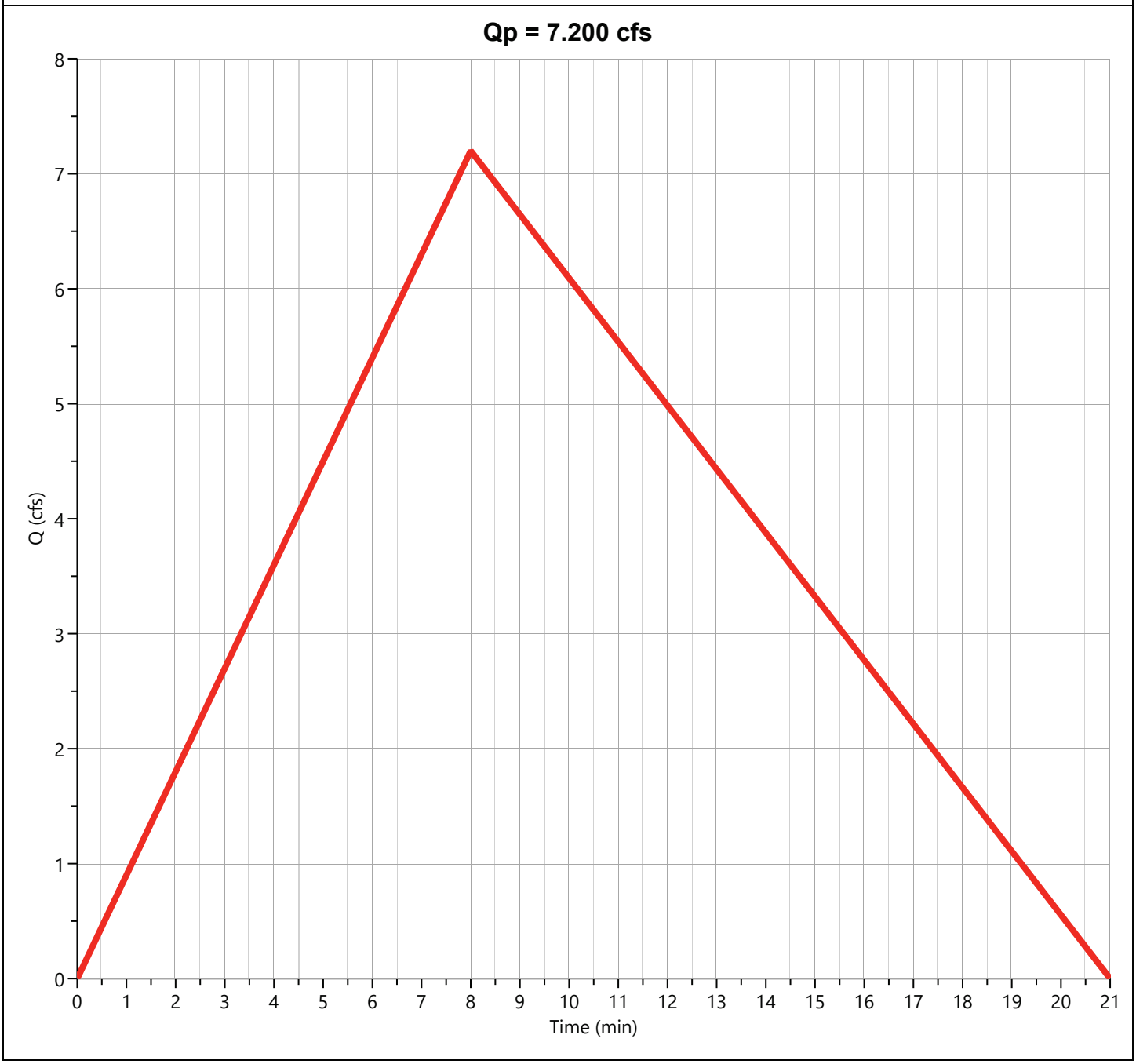
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 7.200 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 4,614 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin "D"
Rational

Hyd. No. 12

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	14.2			
Travel Time (min)	**6.68**	**0.00**	**0.00**	**6.68**
Shallow Concentrated Flow				
Flow Length (ft)	554			
Watercourse Slope (%)	11.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.35			
Travel Time (min)	**1.73**	**0.00**	**0.00**	**1.73**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**8 min**

Hydrograph Report

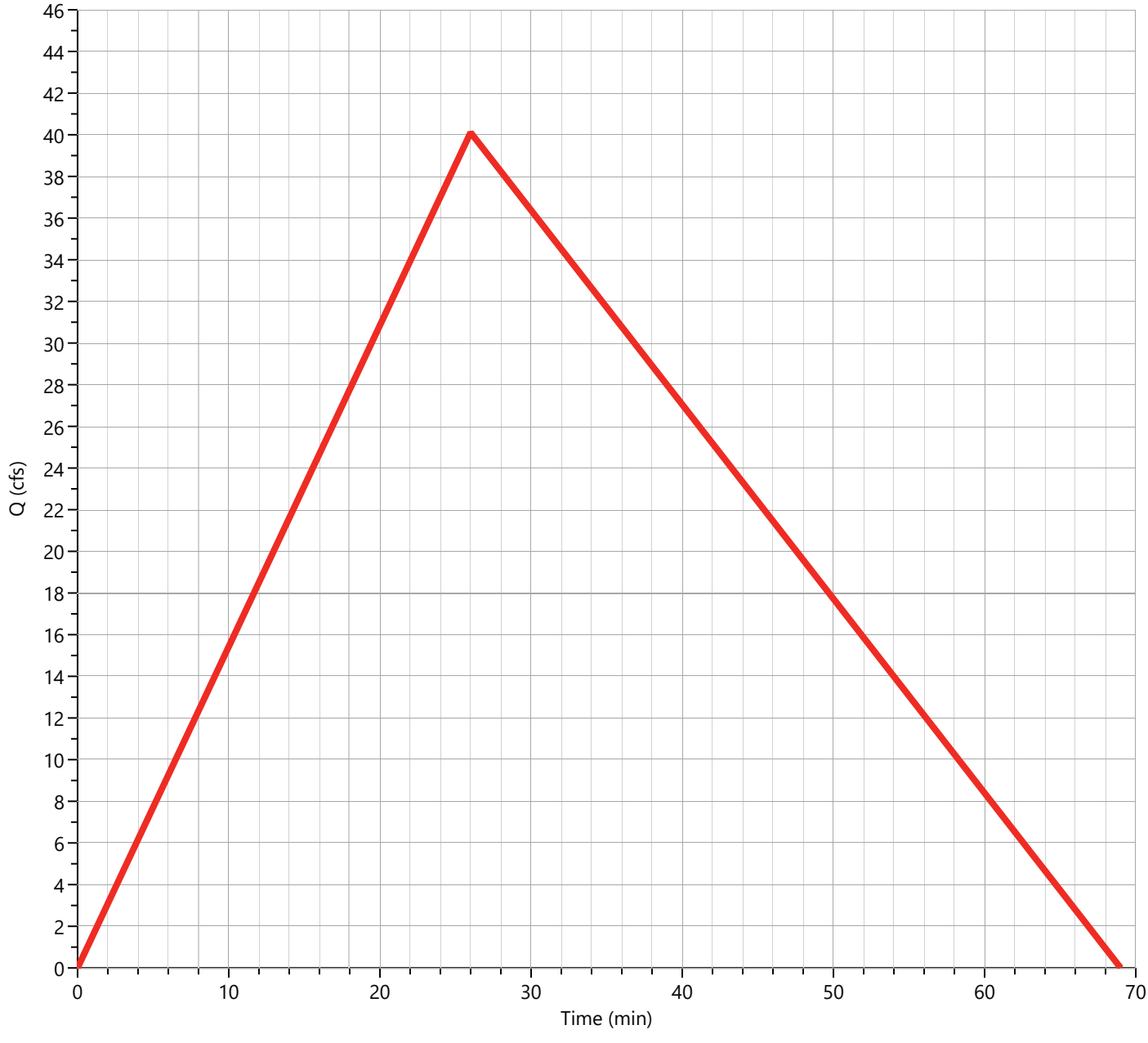
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 40.11 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.43 hrs
Time Interval	= 1 min	Runoff Volume	= 83,525 cuft
Drainage Area	= 18.36 ac	Runoff Coeff.	= 0.75
Tc Method	= User	Time of Conc. (Tc)	= 26.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 2.91 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

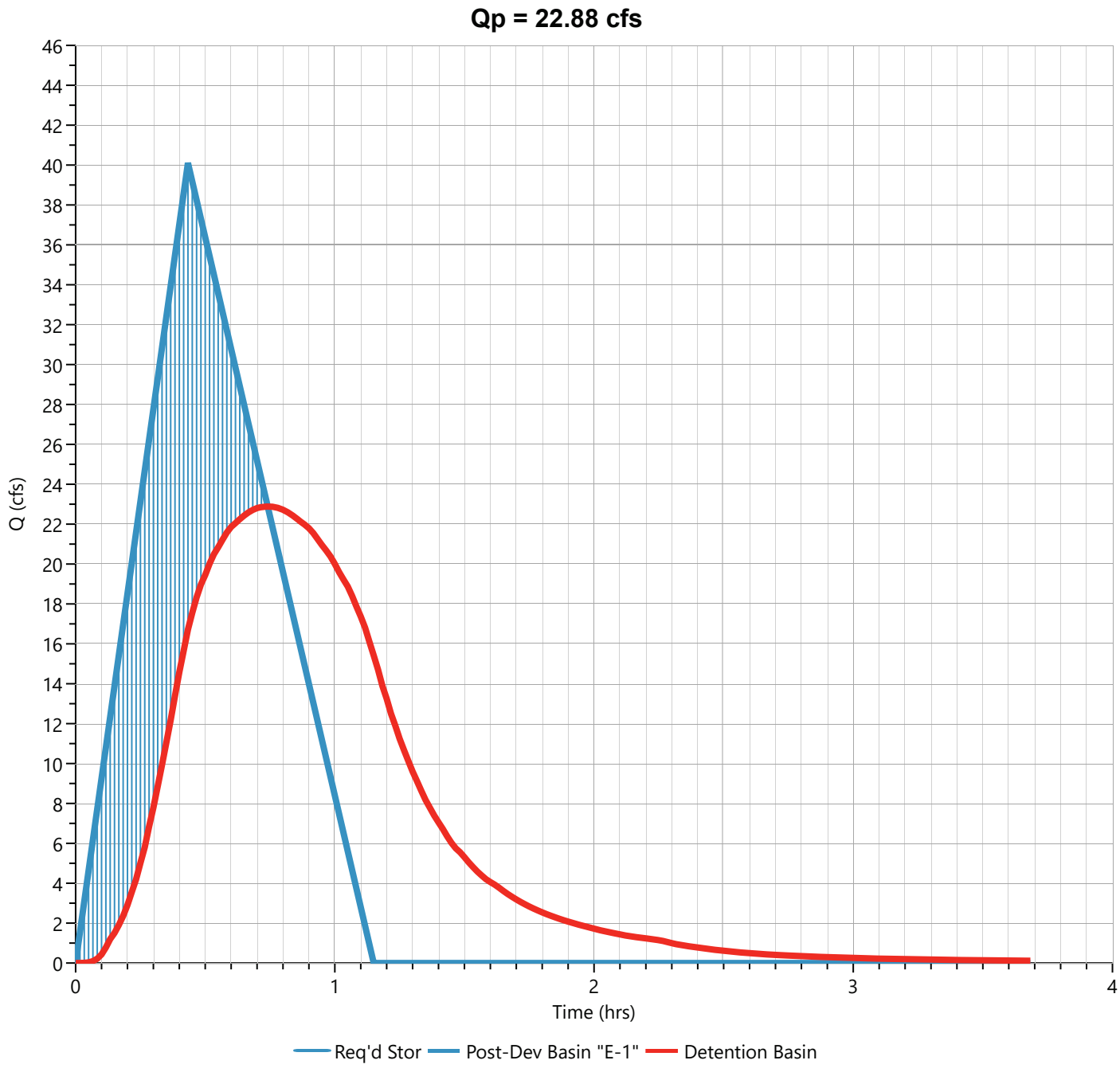
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 22.88 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.73 hrs
Time Interval	= 1 min	Hydrograph Volume	= 82,999 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 469.66 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 34,545 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 24 min



Pond Report

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

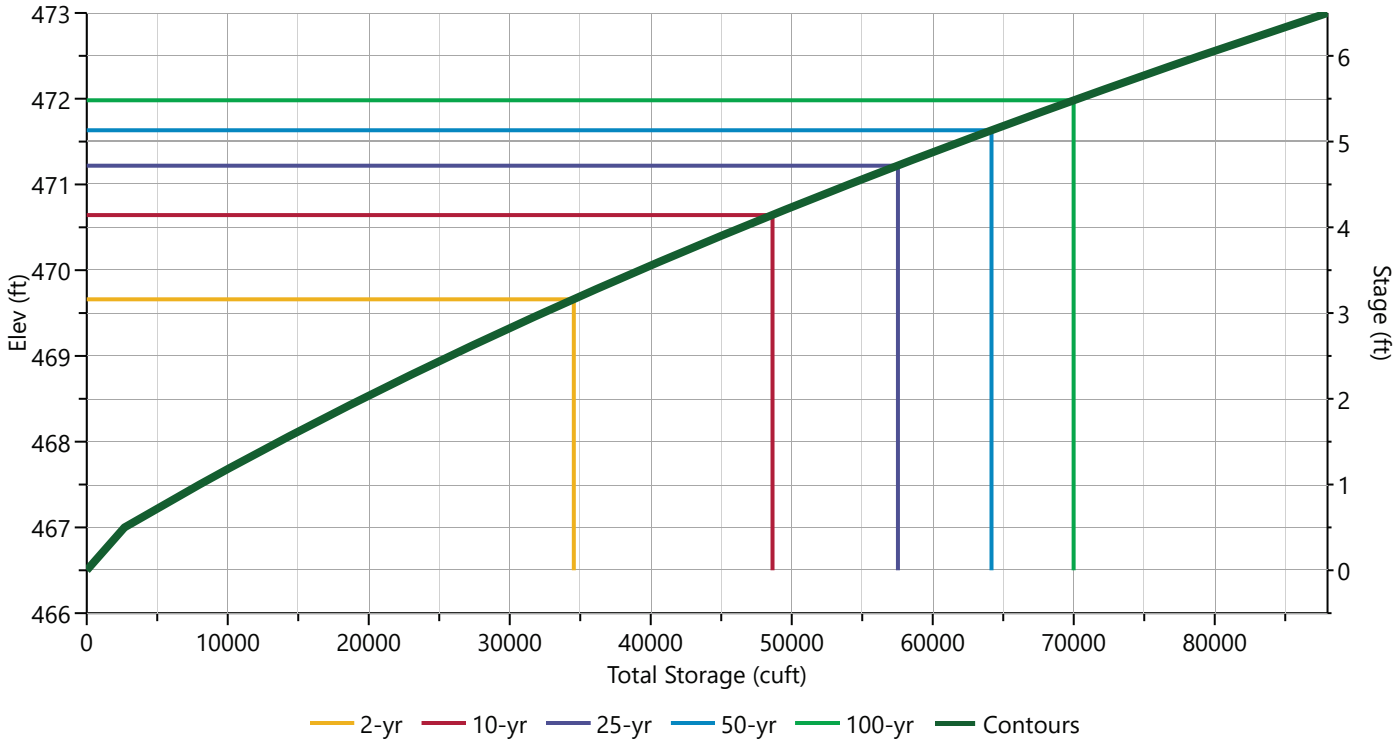
Hilltop Detention Pond

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	466.50
Voids (%)	100.00
Volume Calc	Ave End Area

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	466.50	347	0.000	0.000
0.50	467.00	10,363	2,678	2,678
1.00	467.50	10,941	5,326	8,004
1.50	468.00	11,528	5,617	13,621
2.00	468.50	12,158	5,922	19,542
2.50	469.00	12,801	6,240	25,782
3.00	469.50	13,459	6,565	32,347
3.50	470.00	14,131	6,898	39,245
4.00	470.50	14,816	7,237	46,481
4.50	471.00	15,516	7,583	54,064
5.00	471.50	16,230	7,937	62,001
5.50	472.00	16,958	8,297	70,298
6.00	472.50	17,699	8,664	78,962
6.50	473.00	18,455	9,039	88,001



Pond Report

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

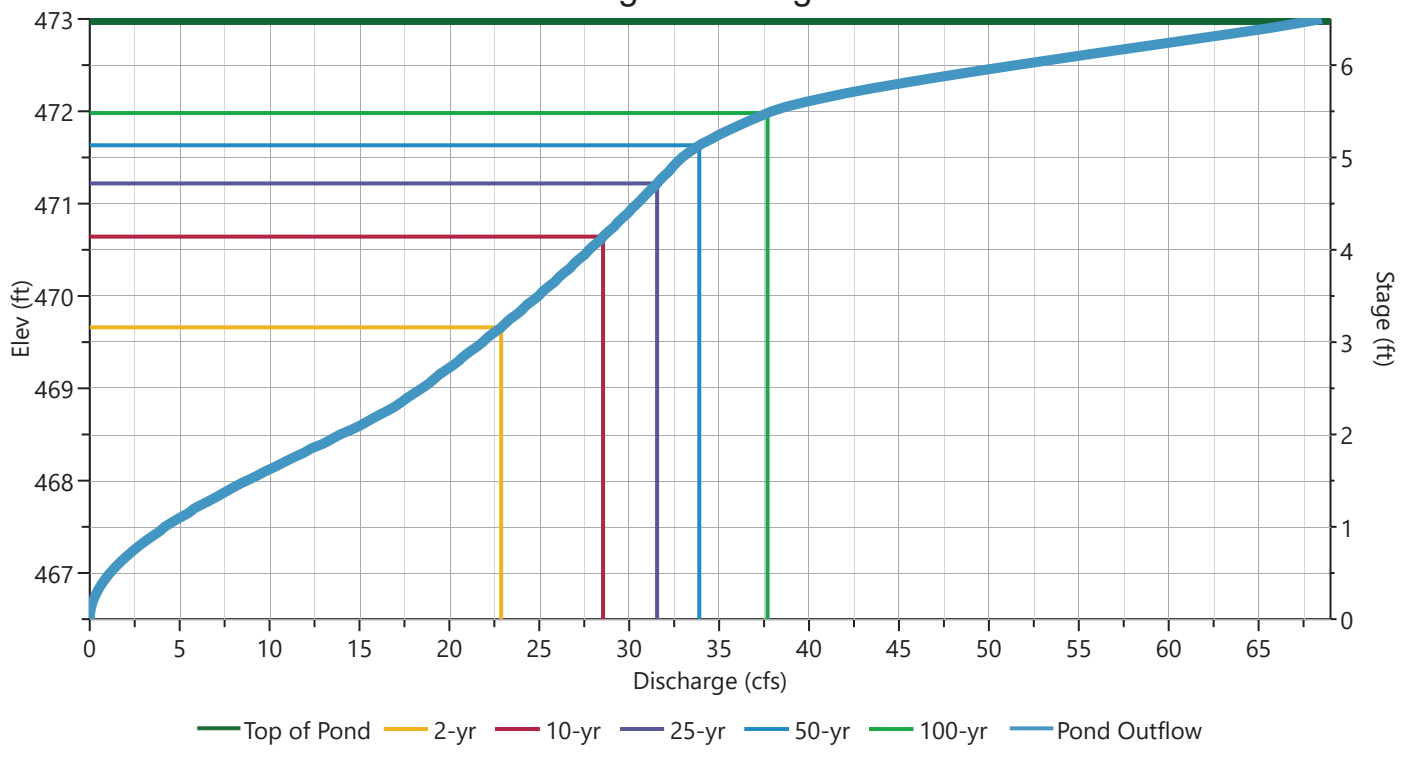
09-29-2026

Hilltop Detention Pond

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Orifice Plate	
		1 (m)	2 (m)	3		
Rise, in	36	28	6		Orifice Dia, in	
Span, in	36	28	36		No. Orifices	
No. Barrels	1	1	1	1	Invert Elevation, ft	
Invert Elevation, ft	466.50	466.50	471.50	468.01	Height, ft	
Orifice Coefficient, Co	0.60	0.60	0.60	0.60	Orifice Coefficient, Co	
Length, ft	113					
Barrel Slope, %	4.66					
N-Value, n	0.013					
Weirs	**Riser**	**Weir**			**Ancillary**	
		1	2	3		
Shape / Type	Circular				Exfiltration, in/hr	
Crest Elevation, ft	472	479.5				
Crest Length, ft	12.56	14				
Angle, deg		45 (1:1)				
Weir Coefficient, Cw	3.3	3.3				

m = Flows through Culvert, i = Independent



Pond Report

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Hilltop Detention Pond

Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	466.50	0.000	0.000	0.000	0.000		0.000	0.000						0.000
0.50	467.00	2,678	1.140 ic	1.140	0.000		0.000	0.000						1.140
1.00	467.50	8,004	4.169 ic	4.169	0.000		0.000	0.000						4.169
1.50	468.00	13,621	8.729 ic	8.729	0.000		0.000	0.000						8.729
2.00	468.50	19,542	13.92 ic	13.92	0.000		0.000	0.000						13.92
2.50	469.00	25,782	18.47 ic	18.47	0.000		0.000	0.000						18.47
3.00	469.50	32,347	21.85 ic	21.85	0.000		0.000	0.000						21.85
3.50	470.00	39,245	24.96 ic	24.96	0.000		0.000	0.000						24.96
4.00	470.50	46,481	27.76 ic	27.76	0.000		0.000	0.000						27.76
4.50	471.00	54,064	30.43 ic	30.43	0.000		0.000	0.000						30.43
5.00	471.50	62,001	32.94 ic	32.94	0.000		0.000	0.000						32.94
5.50	472.00	70,298	37.92 ic	34.31	3.611		0.000	0.000						37.92
6.00	472.50	78,962	51.51 ic	30.60	6.255		14.65	0.000						51.51
6.50	473.00	88,001	68.51 ic	20.03	7.029		41.45	0.000						68.51

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

Pond Report

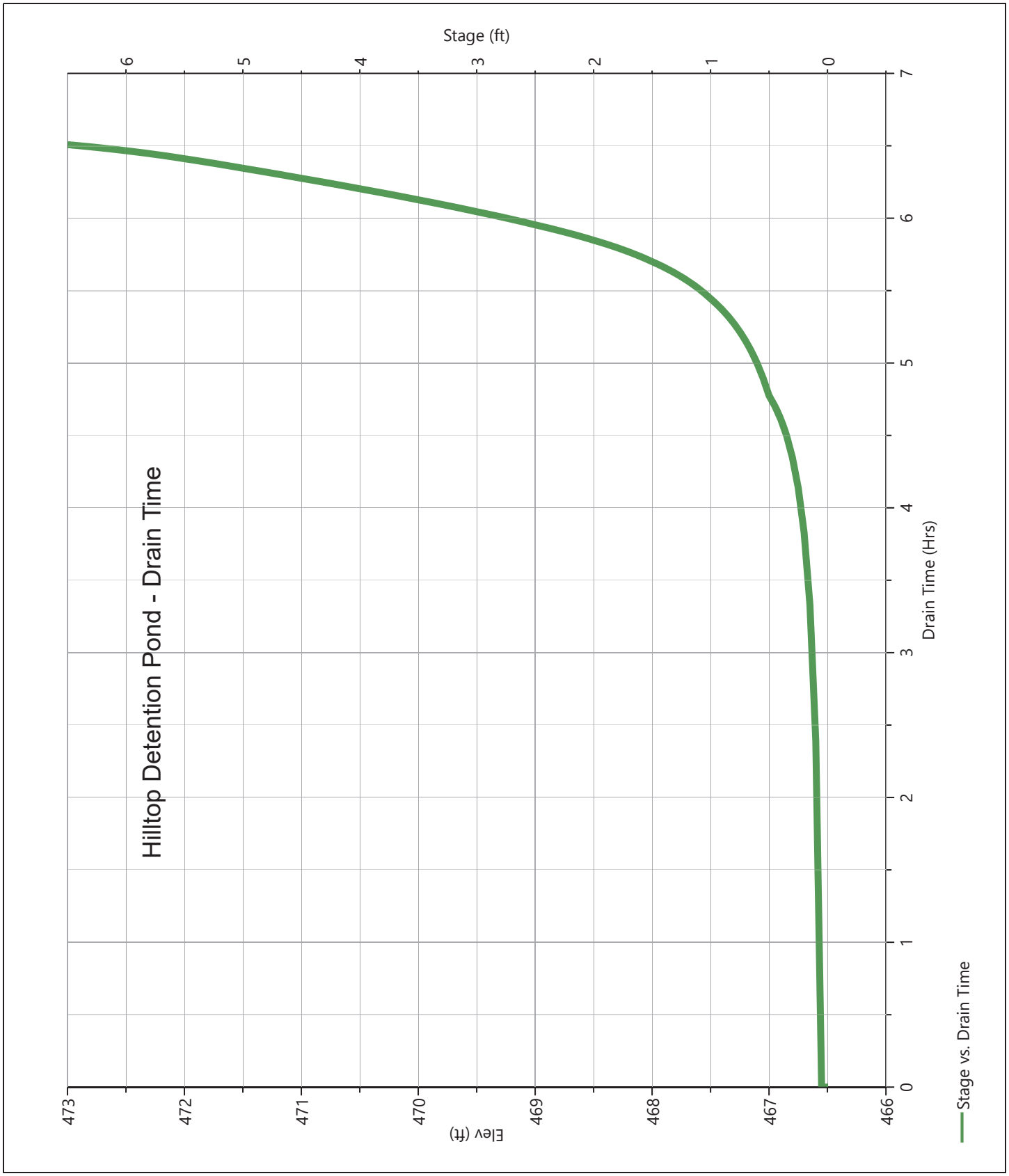
Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Hilltop Detention Pond

Pond Drawdown



Hydrograph Report

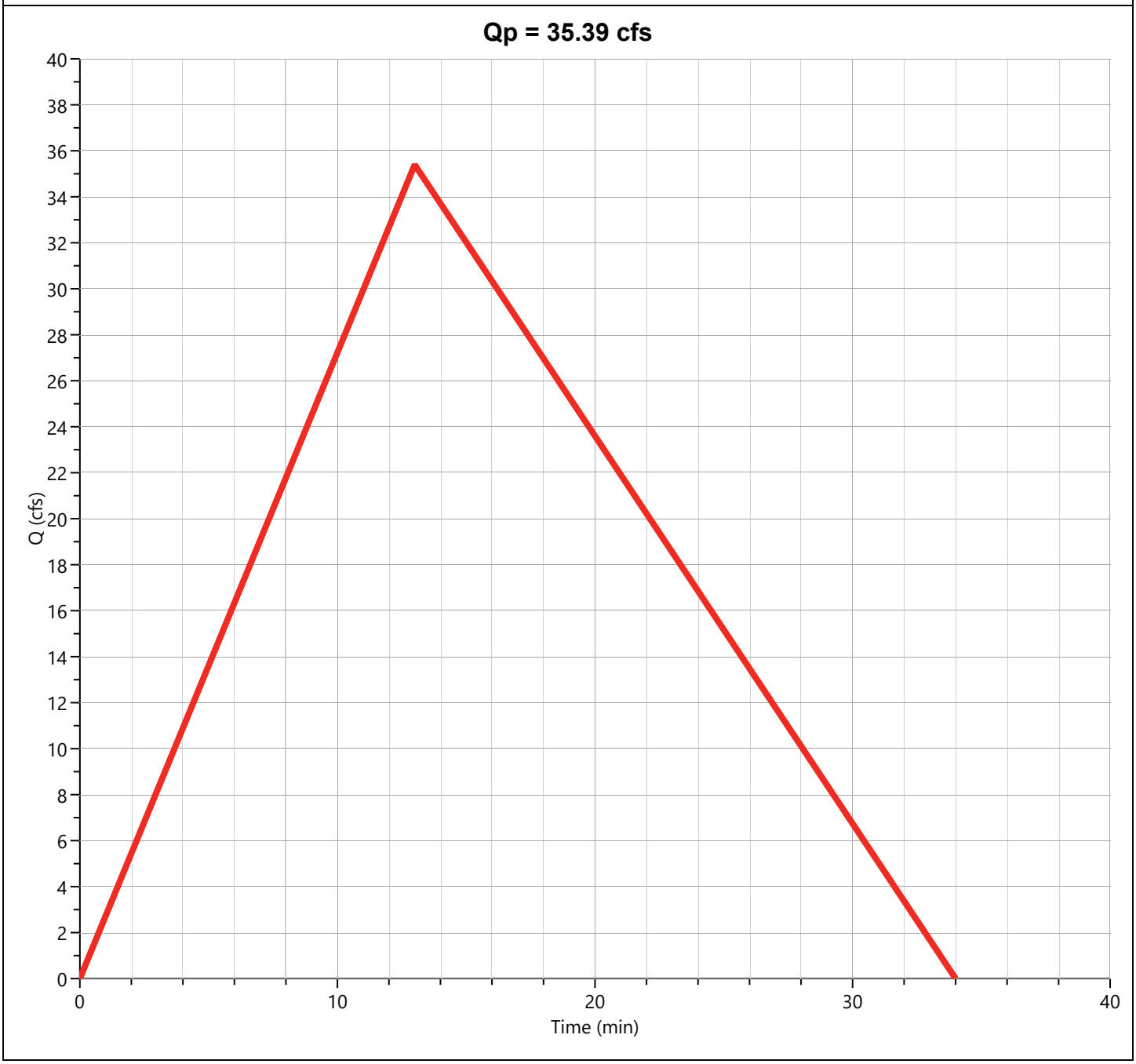
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 35.39 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 36,857 cuft
Drainage Area	= 15.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.99 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin "E-2"
Rational

Hyd. No. 15

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	7.25			
Travel Time (min)	**8.74**	**0.00**	**0.00**	**8.74**
Shallow Concentrated Flow				
Flow Length (ft)	1070			
Watercourse Slope (%)	6.23	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.03			
Travel Time (min)	**4.43**	**0.00**	**0.00**	**4.43**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13 min**

Hydrograph Report

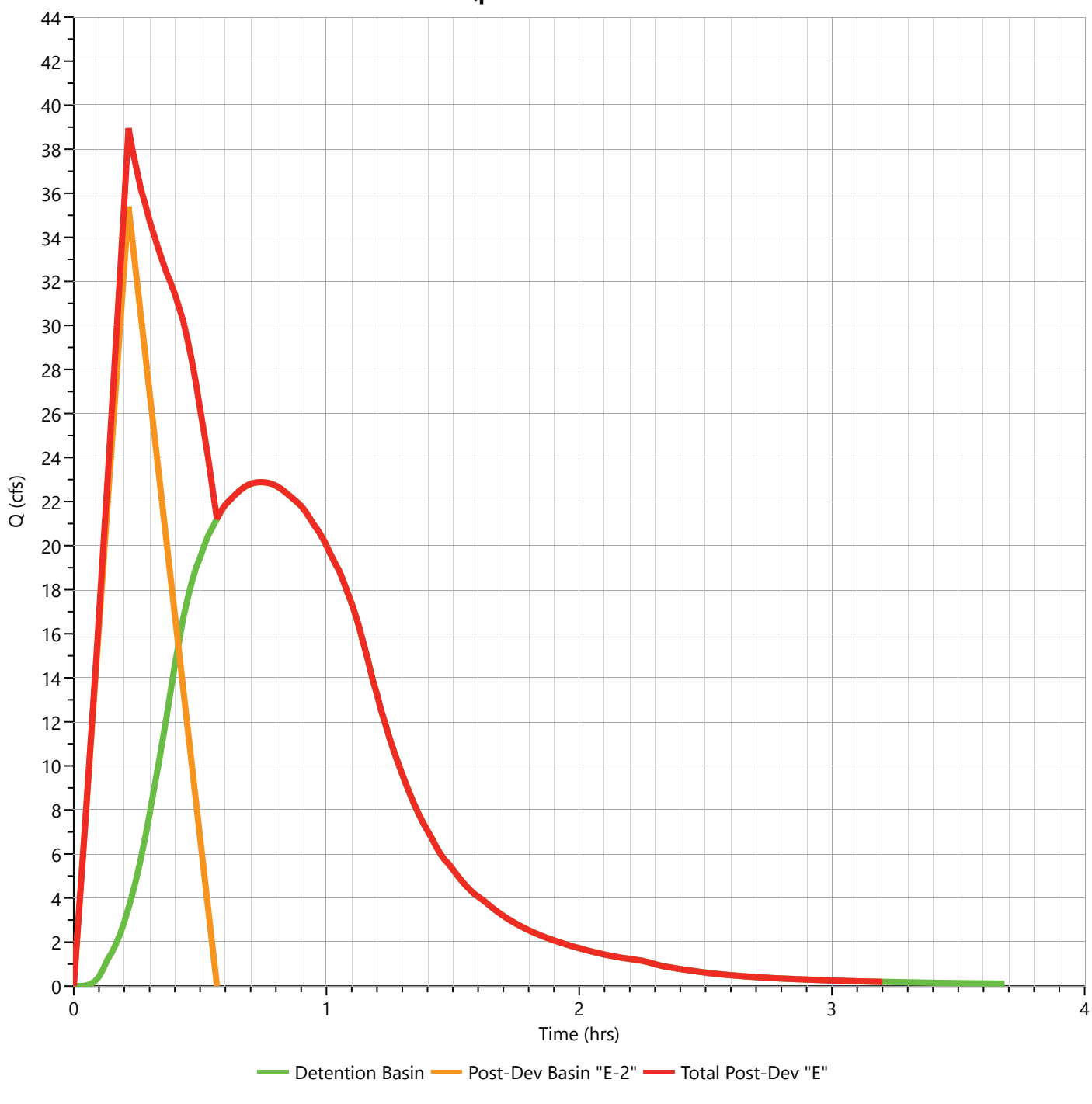
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Post-Dev "E"

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 38.95 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 119,102 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 15.86 ac



Hydrograph Report

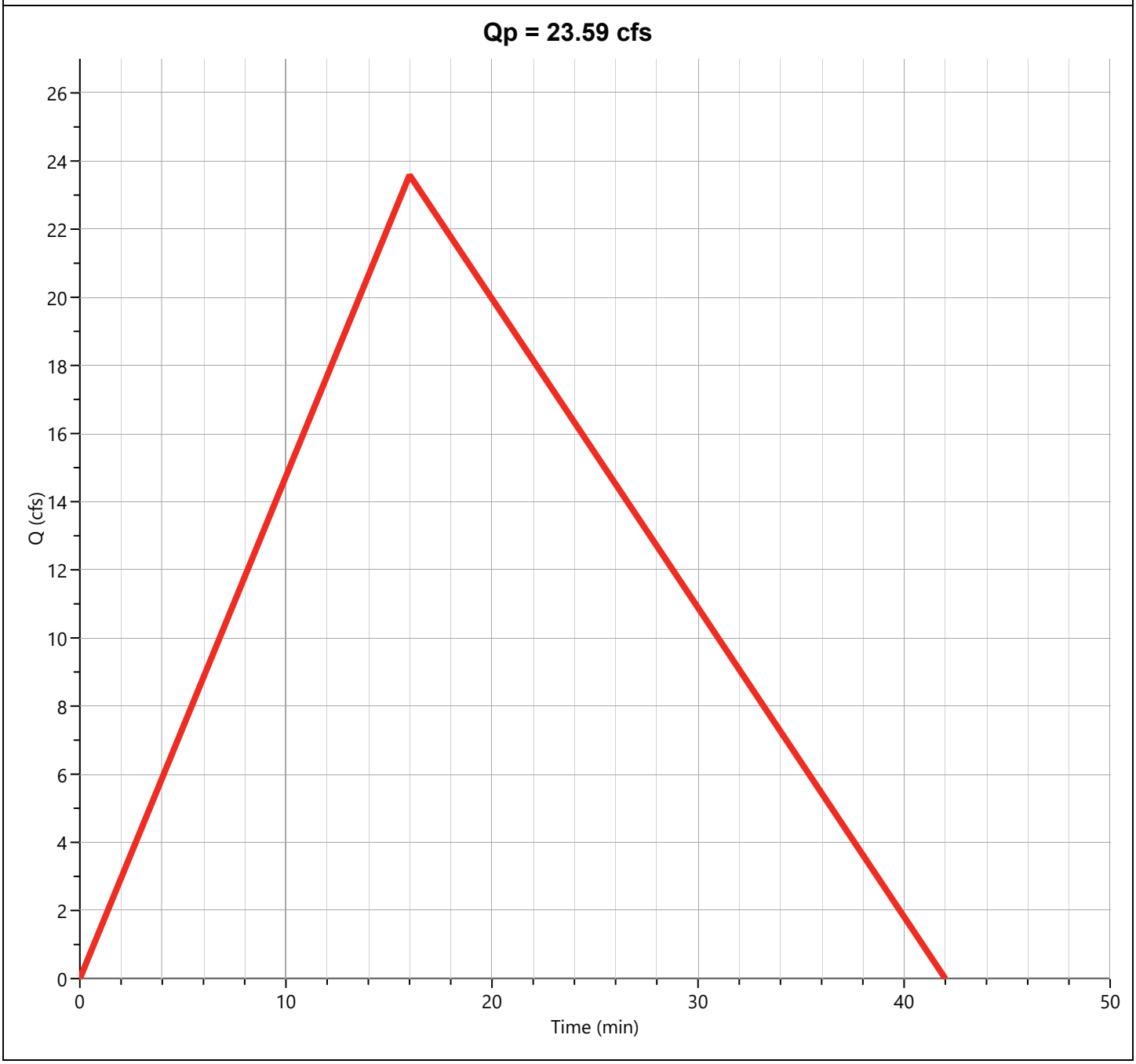
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 23.59 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 30,229 cuft
Drainage Area	= 11.61 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.63 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys

Hydrology Studio v 3.0.0.44

09-29-2026

Post-Dev Basin "F"
Rational

Hyd. No. 17

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	6			
Travel Time (min)	**9.43**	**0.00**	**0.00**	**9.43**
Shallow Concentrated Flow				
Flow Length (ft)	1362			
Watercourse Slope (%)	4.65	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.48			
Travel Time (min)	**6.52**	**0.00**	**0.00**	**6.52**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**16 min**

Design Storm Report

Custom Storm filename:

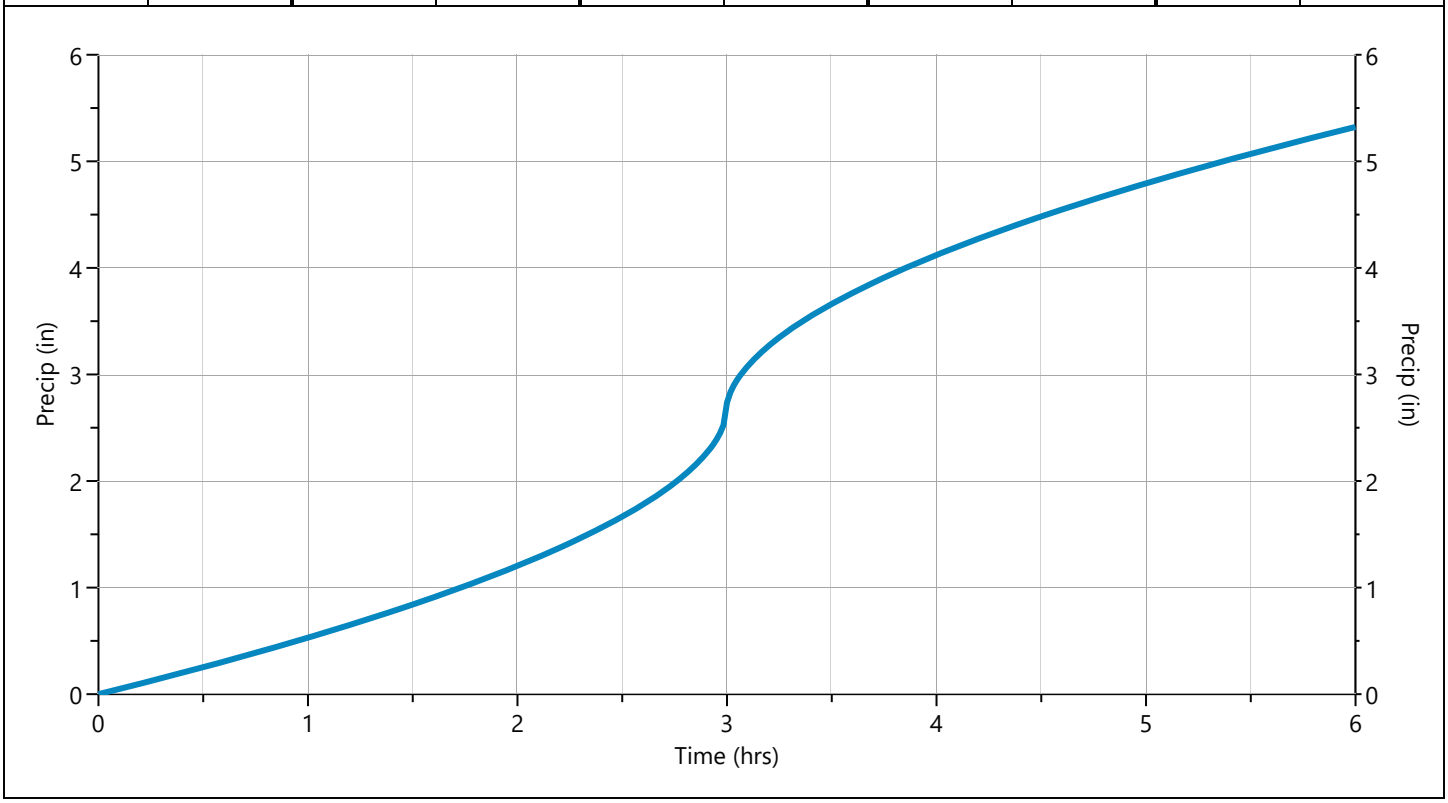
Hydrology Studio v 3.0.0.44

09-29-2026

Storm Distribution: IDF Based - Synthetic, 6-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	✔ 2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
6 hrs	0	5.32	0	6.37	7.21	8.30	9.12	9.85	

Incremental Rainfall Distribution, 2-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
2.50	0.018143	2.68	0.022259	2.87	0.032659	3.05	0.053726	3.23	0.025919
2.52	0.018421	2.70	0.022803	2.88	0.034626	3.07	0.046673	3.25	0.025108
2.53	0.018713	2.72	0.023391	2.90	0.037032	3.08	0.041932	3.27	0.024374
2.55	0.019021	2.73	0.024032	2.92	0.040074	3.10	0.038457	3.28	0.023705
2.57	0.019345	2.75	0.024733	2.93	0.044099	3.12	0.035764	3.30	0.023091
2.58	0.019688	2.77	0.025503	2.95	0.049802	3.13	0.033596	3.32	0.022526
2.60	0.020051	2.78	0.026357	2.97	0.058857	3.15	0.031801	3.33	0.022002
2.62	0.020437	2.80	0.027310	2.98	0.077022	3.17	0.030281	3.35	0.021516
2.63	0.020847	2.82	0.028382	**3.00**	**0.211936**	3.18	0.028972	3.37	0.021063
2.65	0.021286	2.83	0.029603	3.02	0.097849	3.20	0.027829	3.38	0.020639
2.67	0.021755	2.85	0.031011	3.03	0.066003	3.22	0.026819	3.40	0.020241



Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	11.43	0.18	10,070	----		
2	Rational	Pre-Dev Basin "B"	38.41	0.25	46,149	----		
3	Rational	Pre-Dev Basin "C"	21.67	0.18	19,095	----		
4	Rational	Pre-Dev Basin "D"	9.804	0.13	6,283	----		
5	Rational	Pre-Dev Basin "E-1"	31.02	0.20	29,819	----		
6	Rational	Pre-Dev Basin "E-2"	52.69	0.22	54,864	----		
7	Junction	Total Pre Basin "E"	82.16	0.22	83,523	5, 6		
8	Rational	Pre-Dev Basin "F"	33.12	0.28	45,094	----		
9	Rational	Post-Dev Basin A	10.85	0.25	13,032	----		
10	Rational	Post-Dev Basin B	29.69	0.35	49,939	----		
11	Rational	Post-Dev Basin "C"	22.16	0.18	19,529	----		
12	Rational	Post-Dev Basin "D"	9.641	0.13	6,178	----		
13	Rational	Post-Dev Basin "E-1"	53.89	0.43	112,236	----		
14	Pond Route	Detention Basin	28.55	0.77	111,536	13	470.64	48,637
15	Rational	Post-Dev Basin "E-2"	47.46	0.22	49,424	----		
16	Junction	Total Post-Dev "E"	52.67	0.22	159,949	14, 15		
17	Rational	Post-Dev Basin "F"	31.65	0.27	40,562	----		

Hydrograph Report

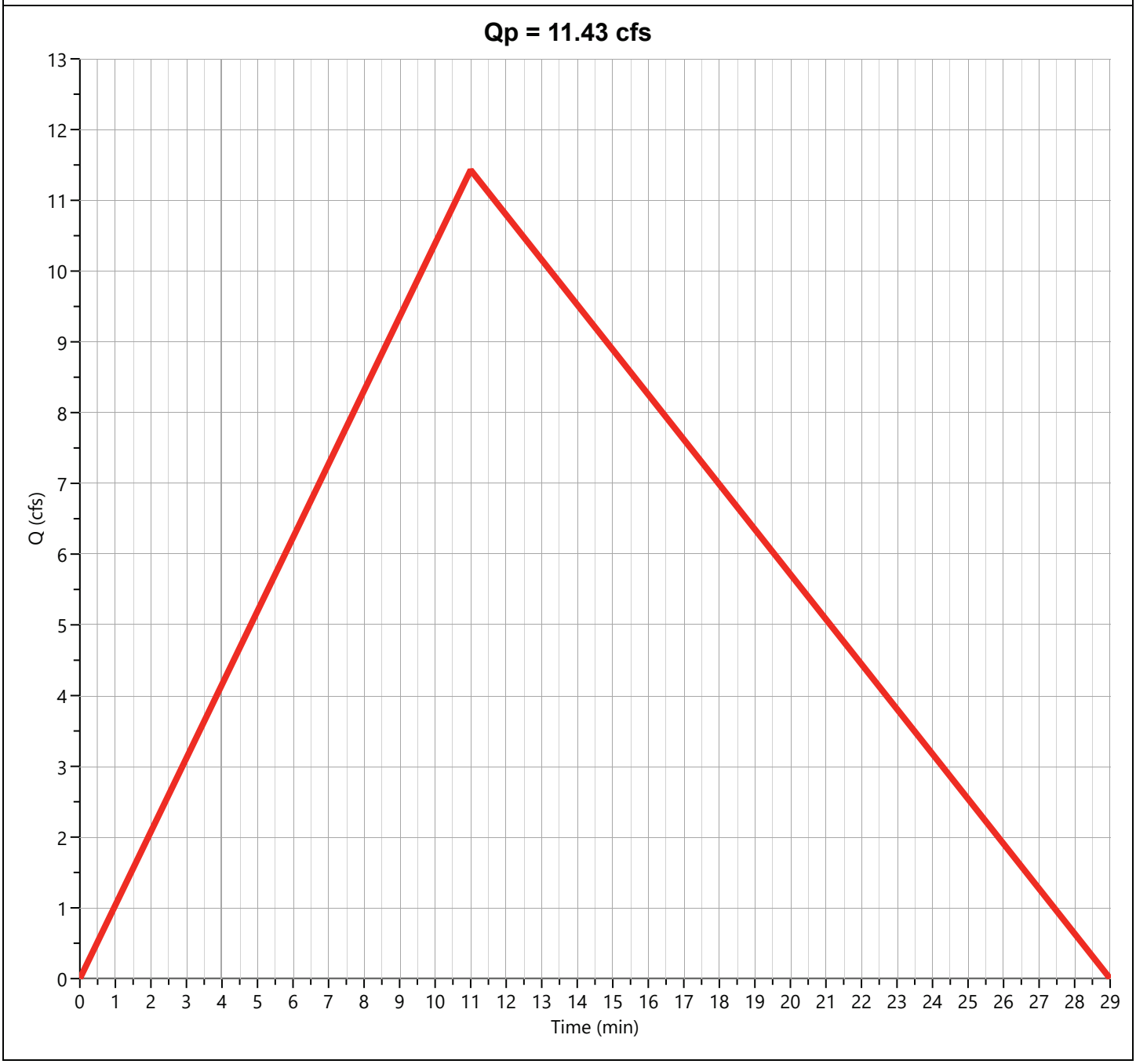
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 11.43 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 10,070 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

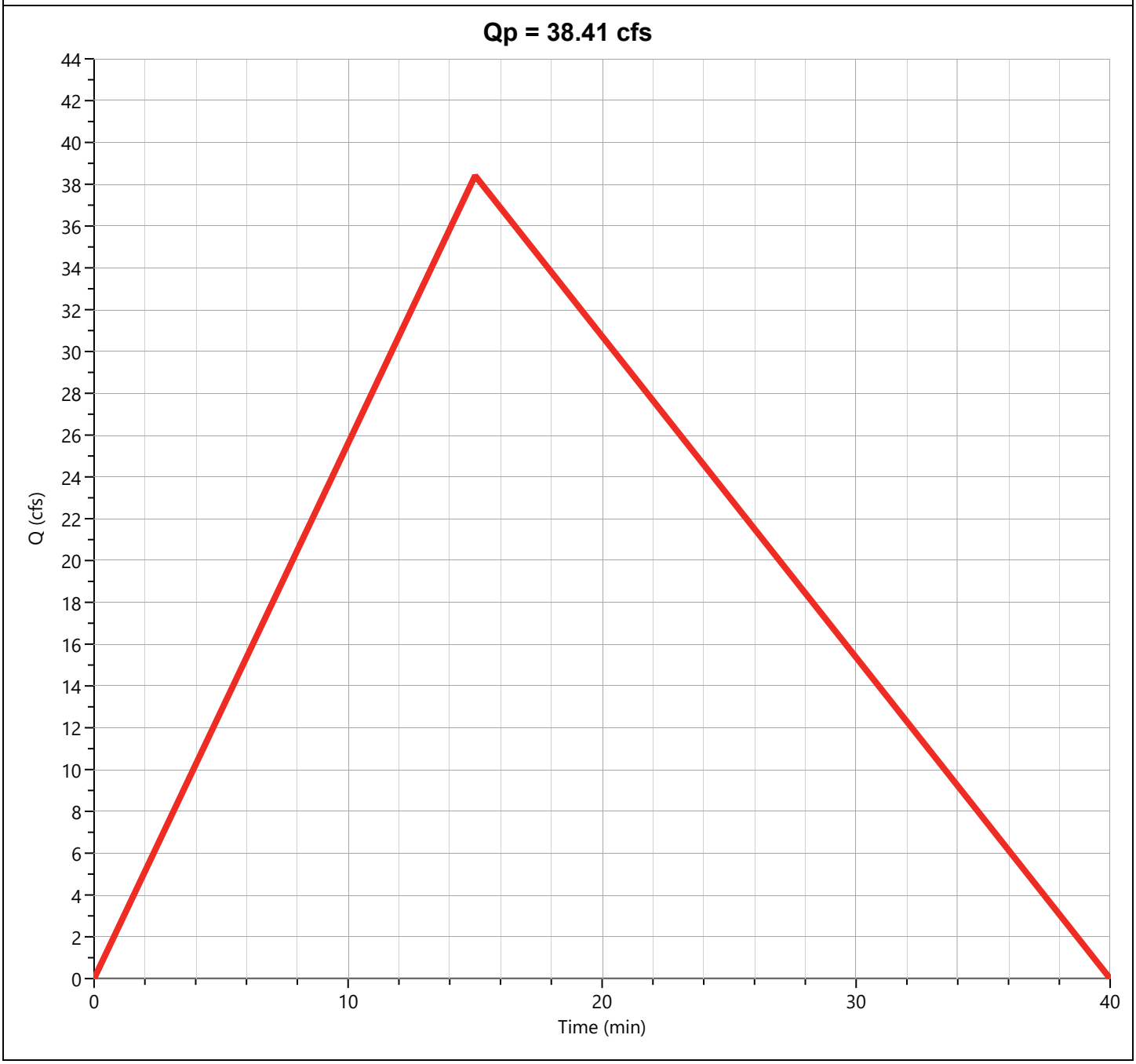
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 38.41 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 46,149 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

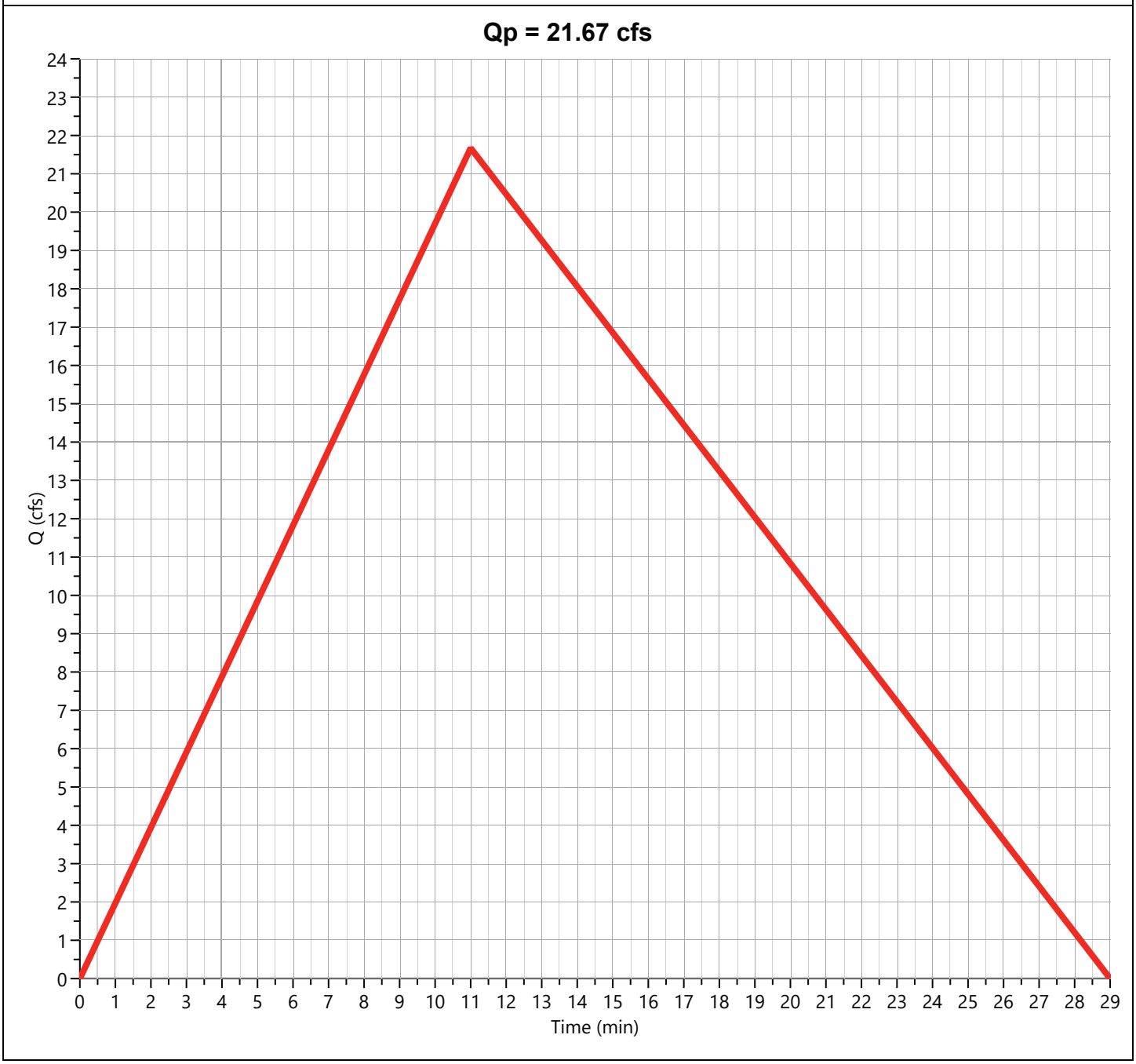
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 21.67 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 19,095 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

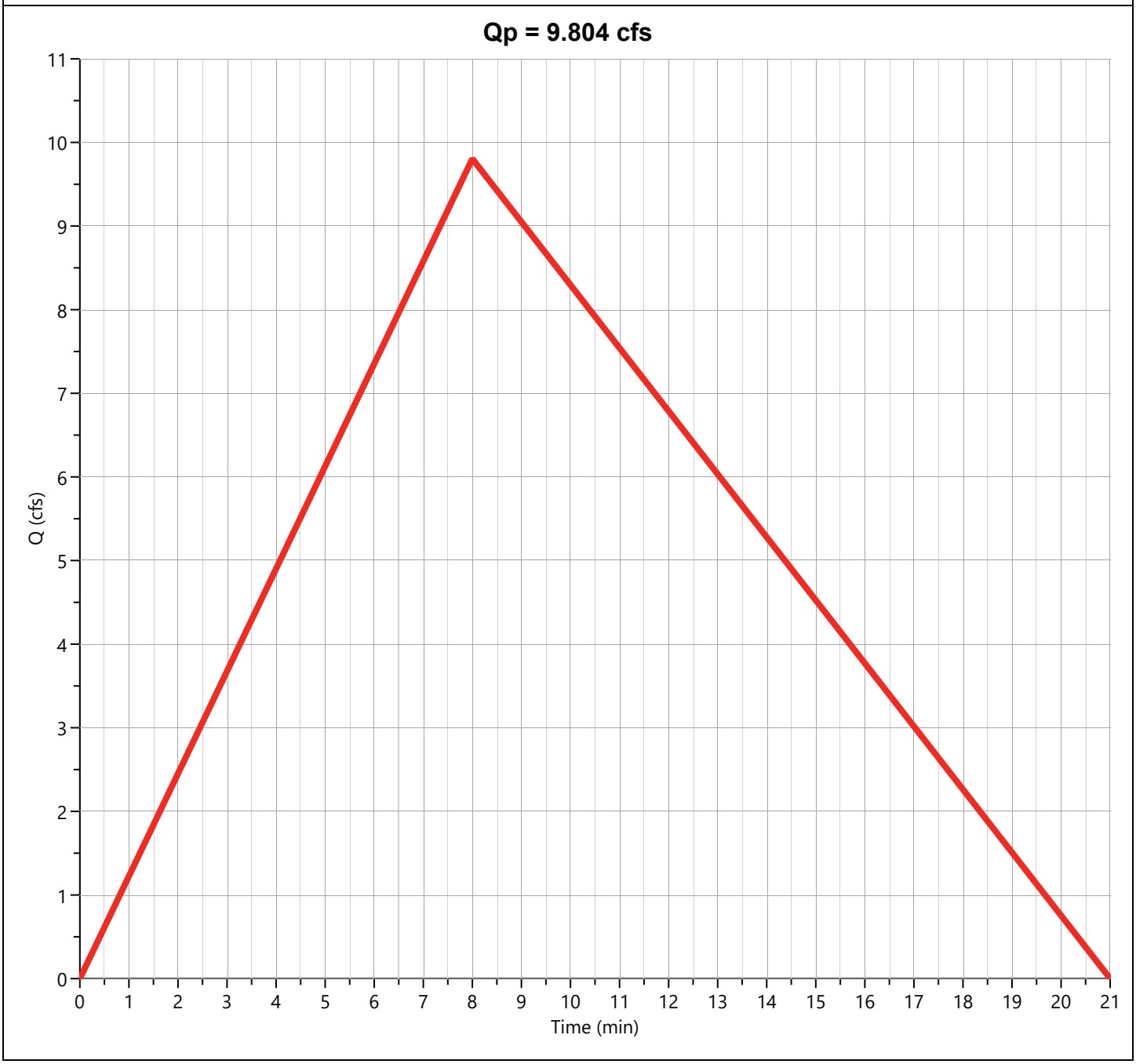
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 9.804 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 6,283 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

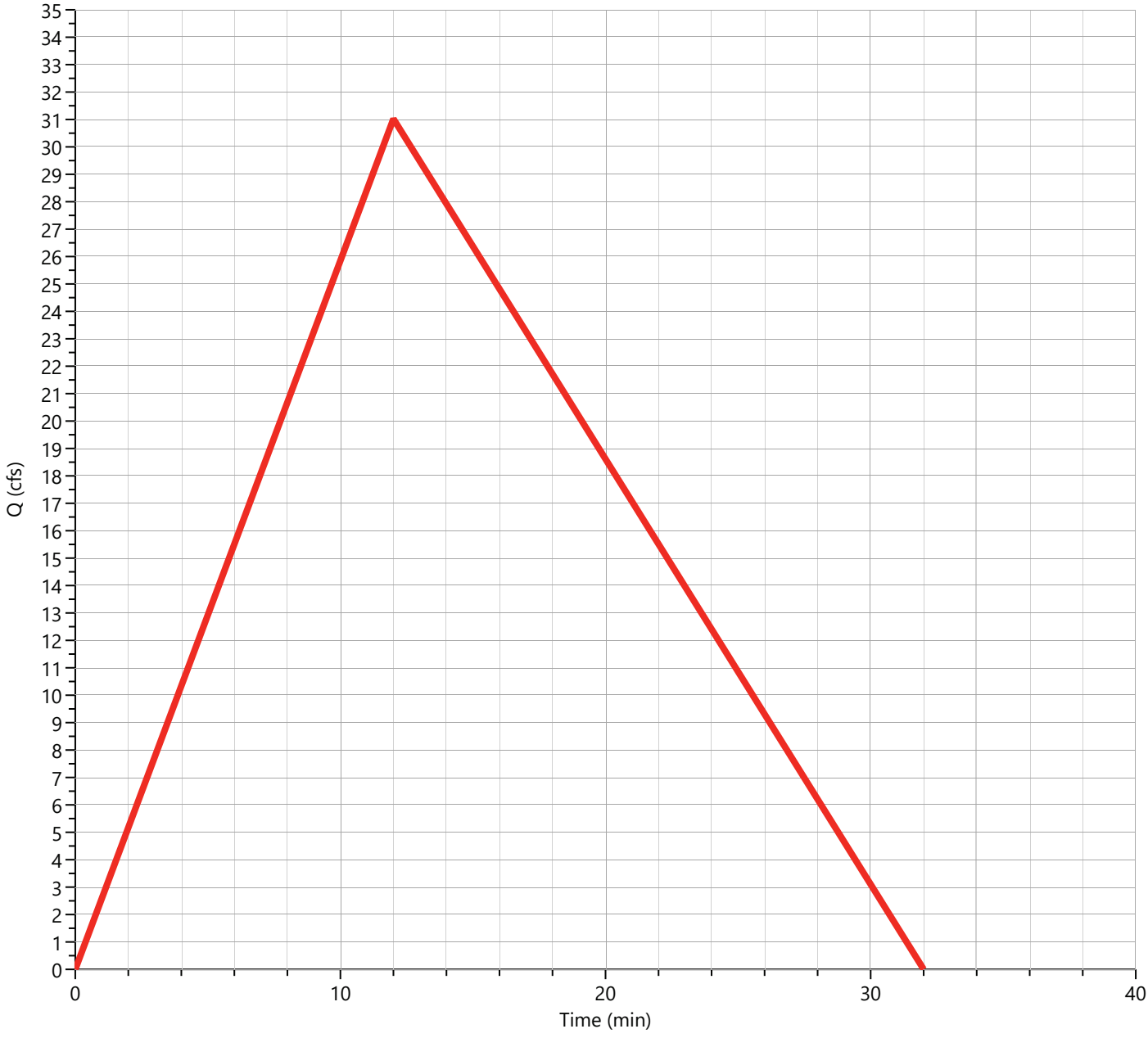
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 31.02 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 29,819 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.54 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

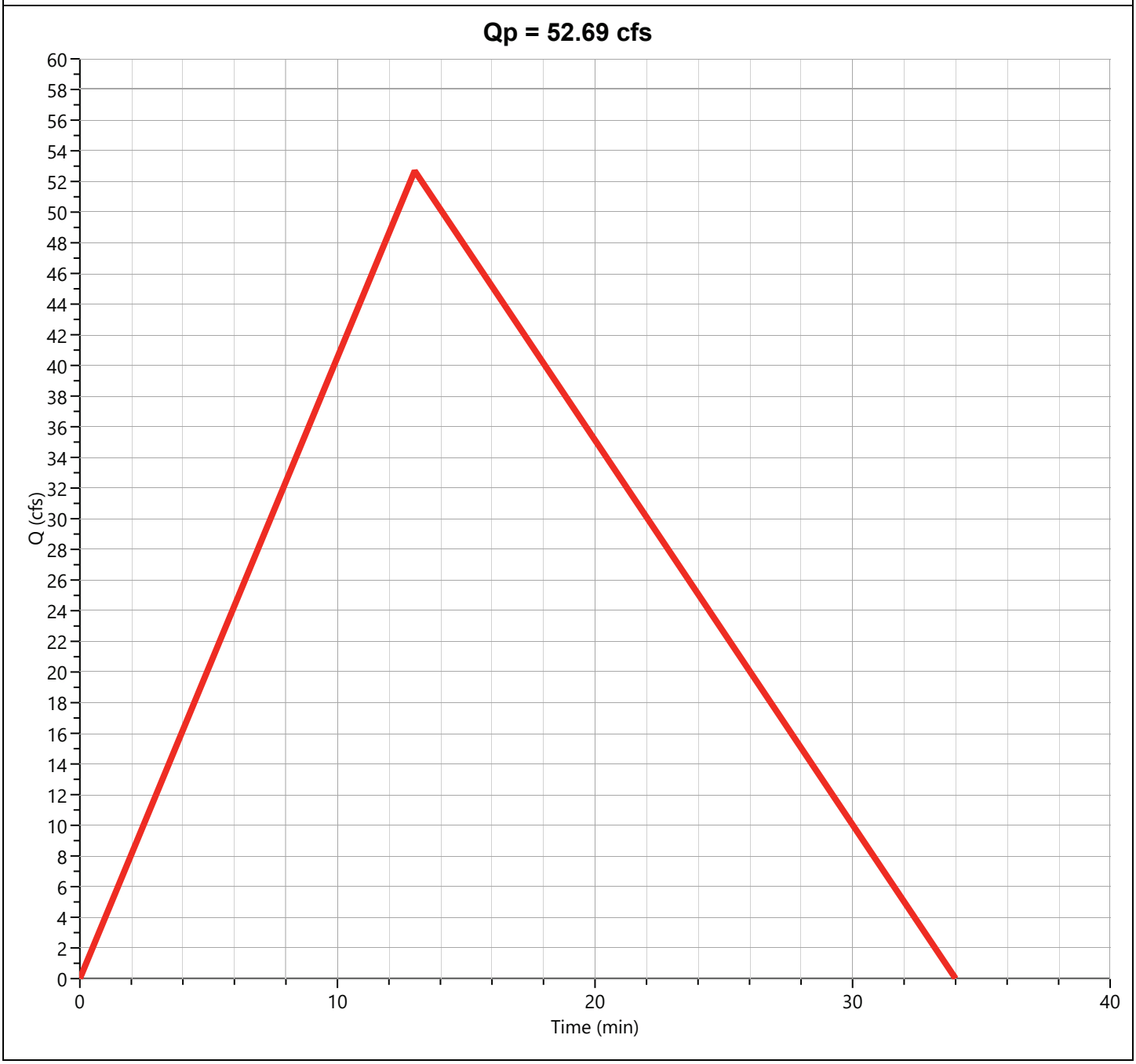
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 52.69 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 54,864 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

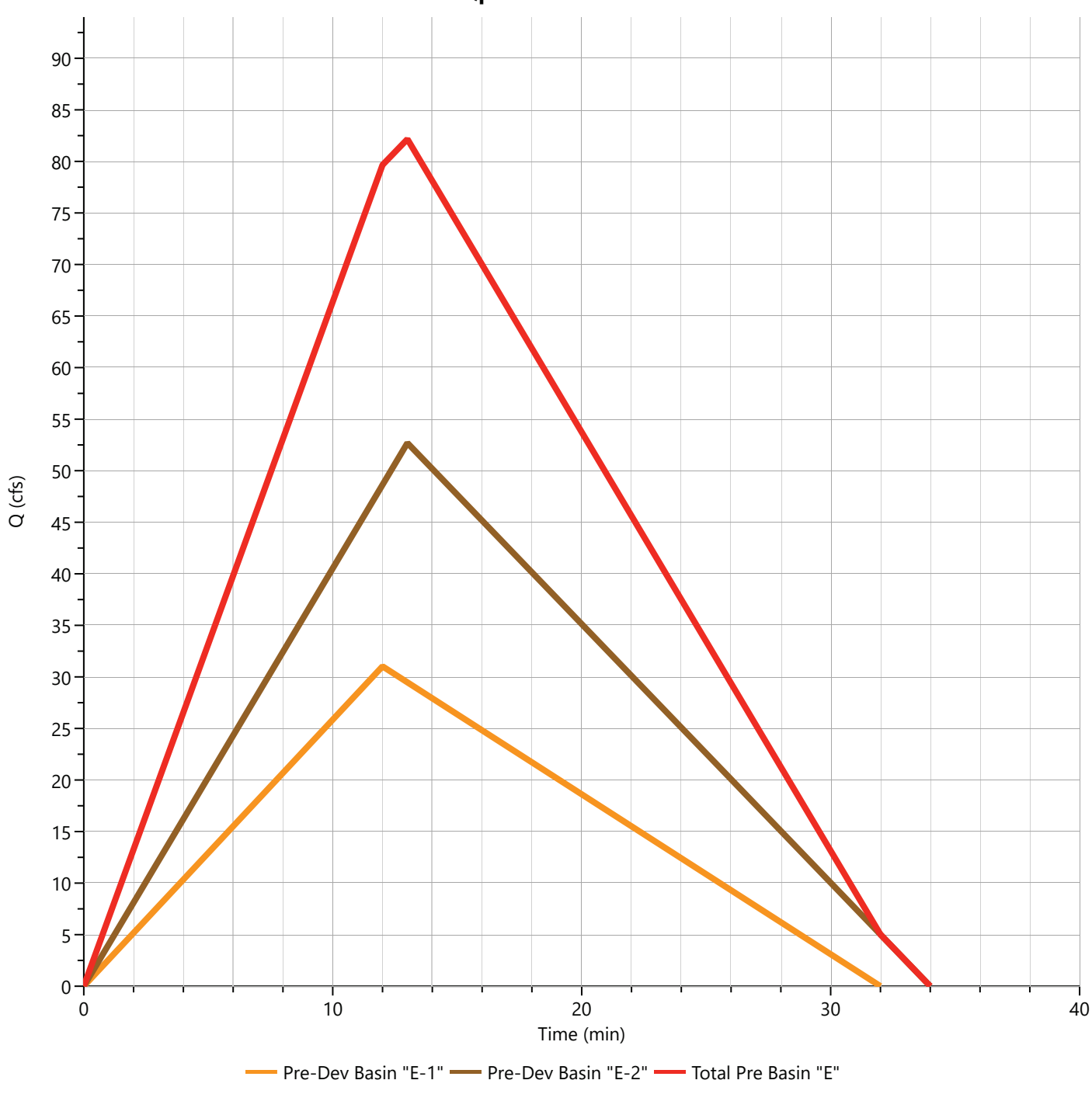
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Pre Basin "E"

Hyd. No. 7

Hydrograph Type	= Junction	Peak Flow	= 82.16 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 83,523 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Hydrograph Report

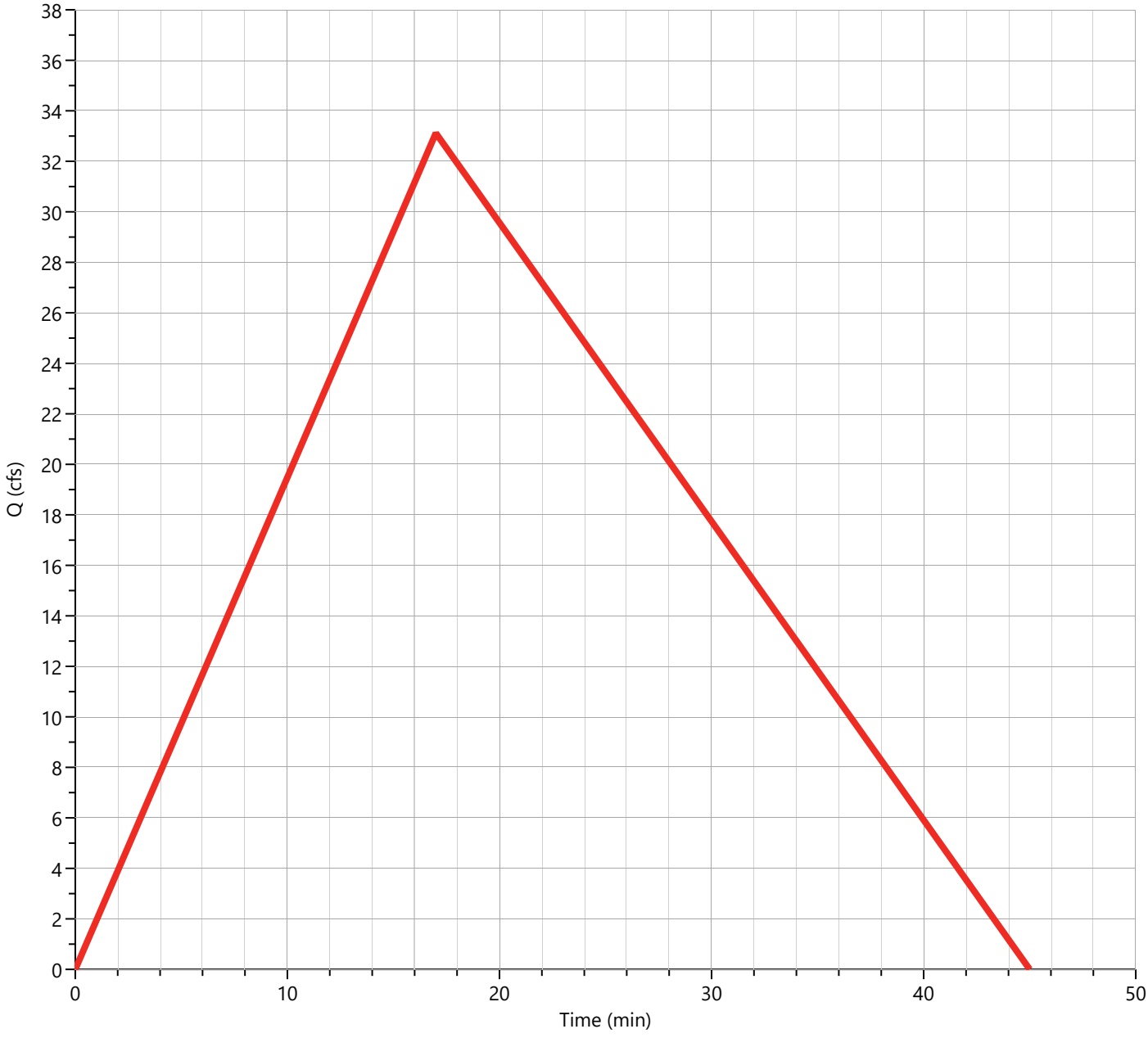
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 33.12 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 45,094 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.74 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

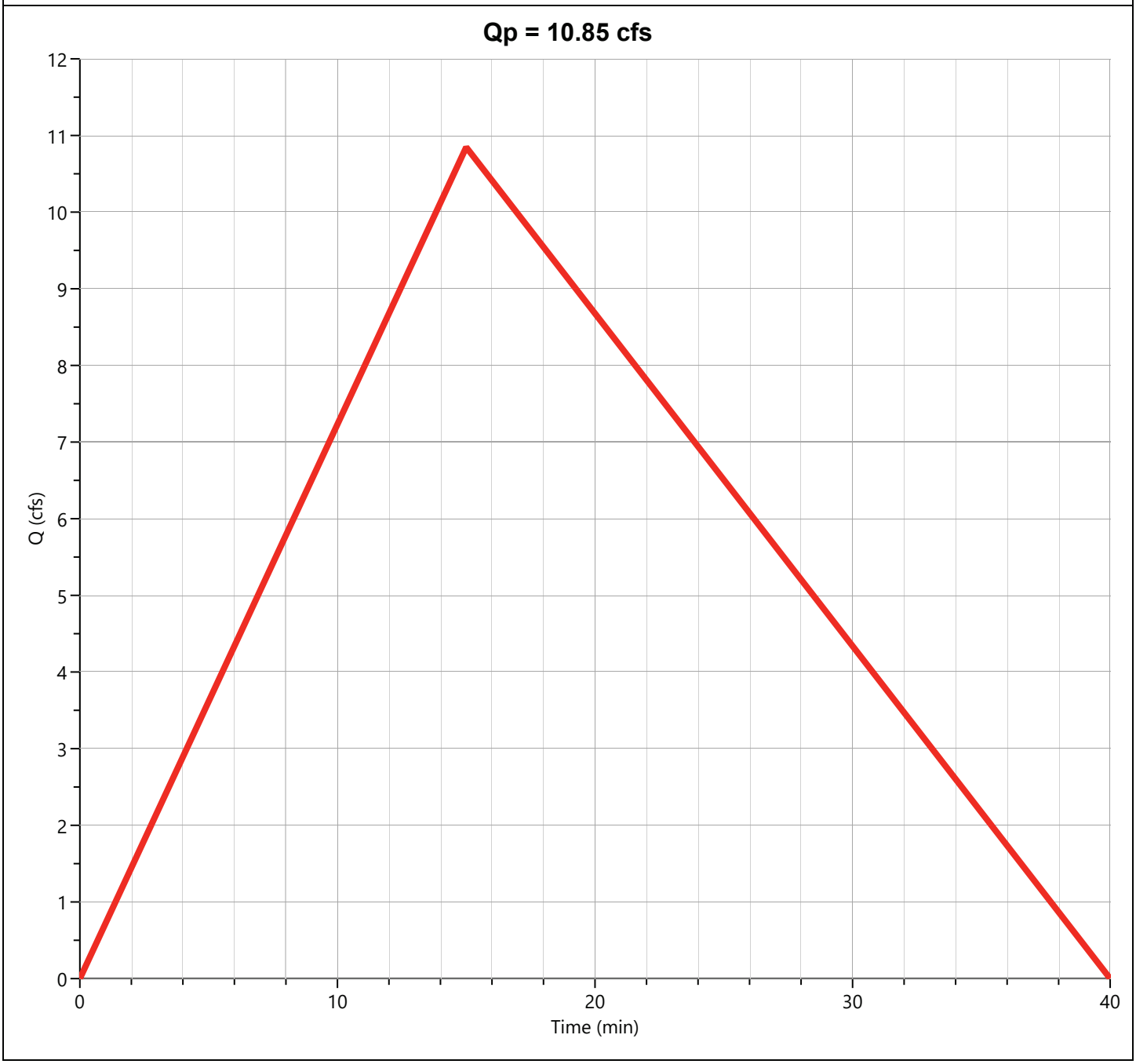
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 10.85 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 13,032 cuft
Drainage Area	= 3.33 ac	Runoff Coeff.	= 0.65
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

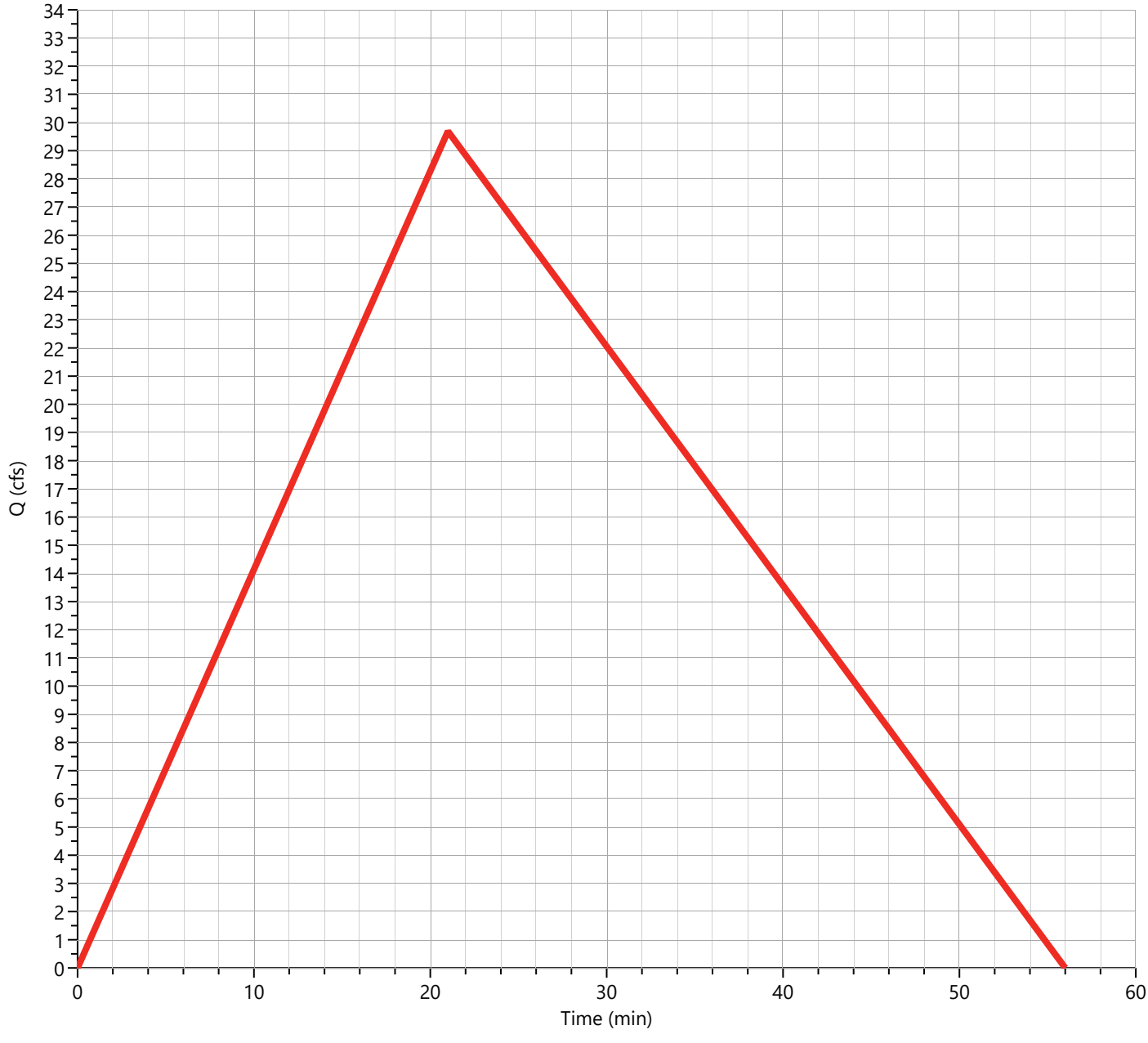
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 29.69 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Runoff Volume	= 49,939 cuft
Drainage Area	= 12.53 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 21.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.31 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

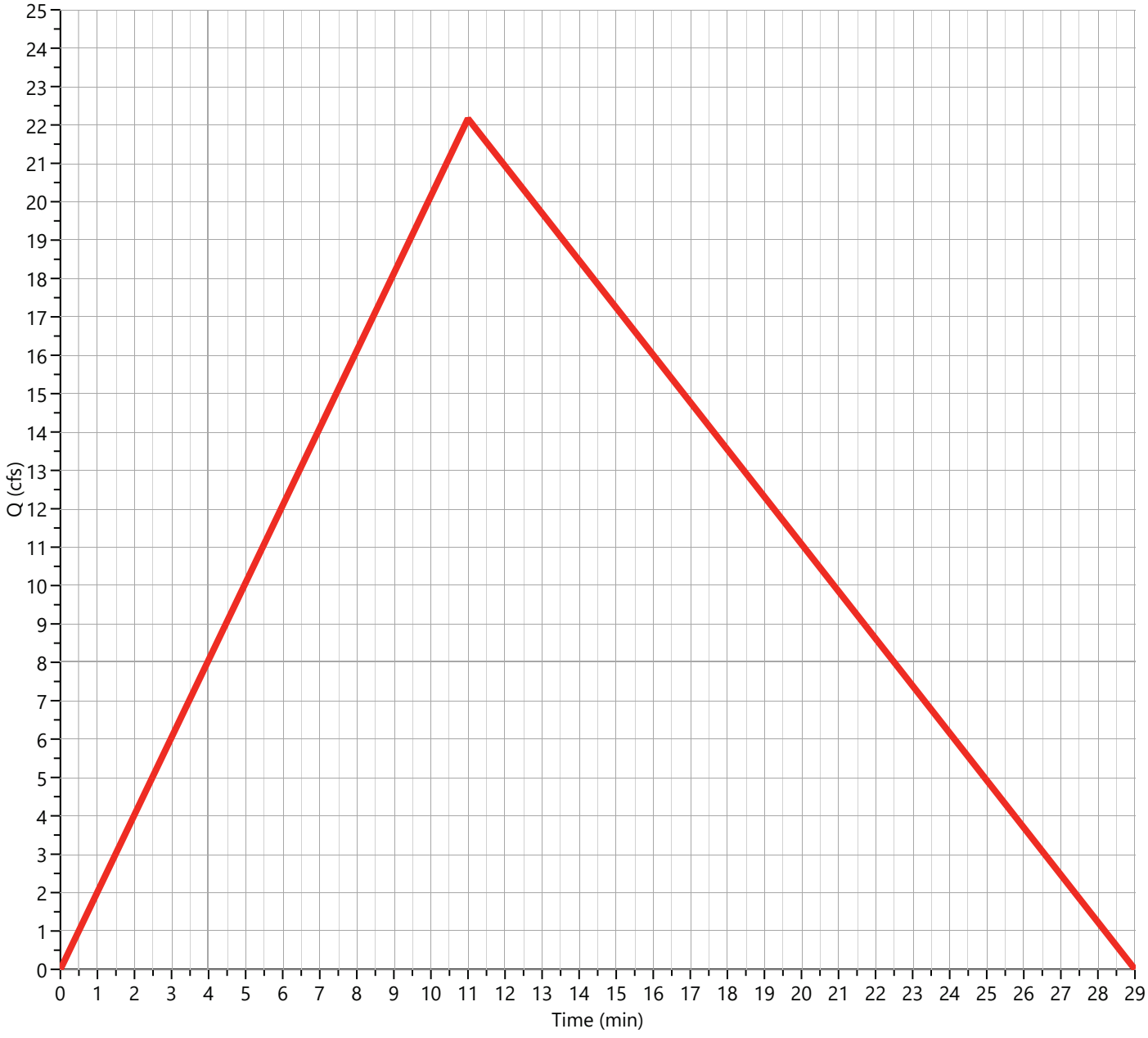
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 22.16 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 19,529 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

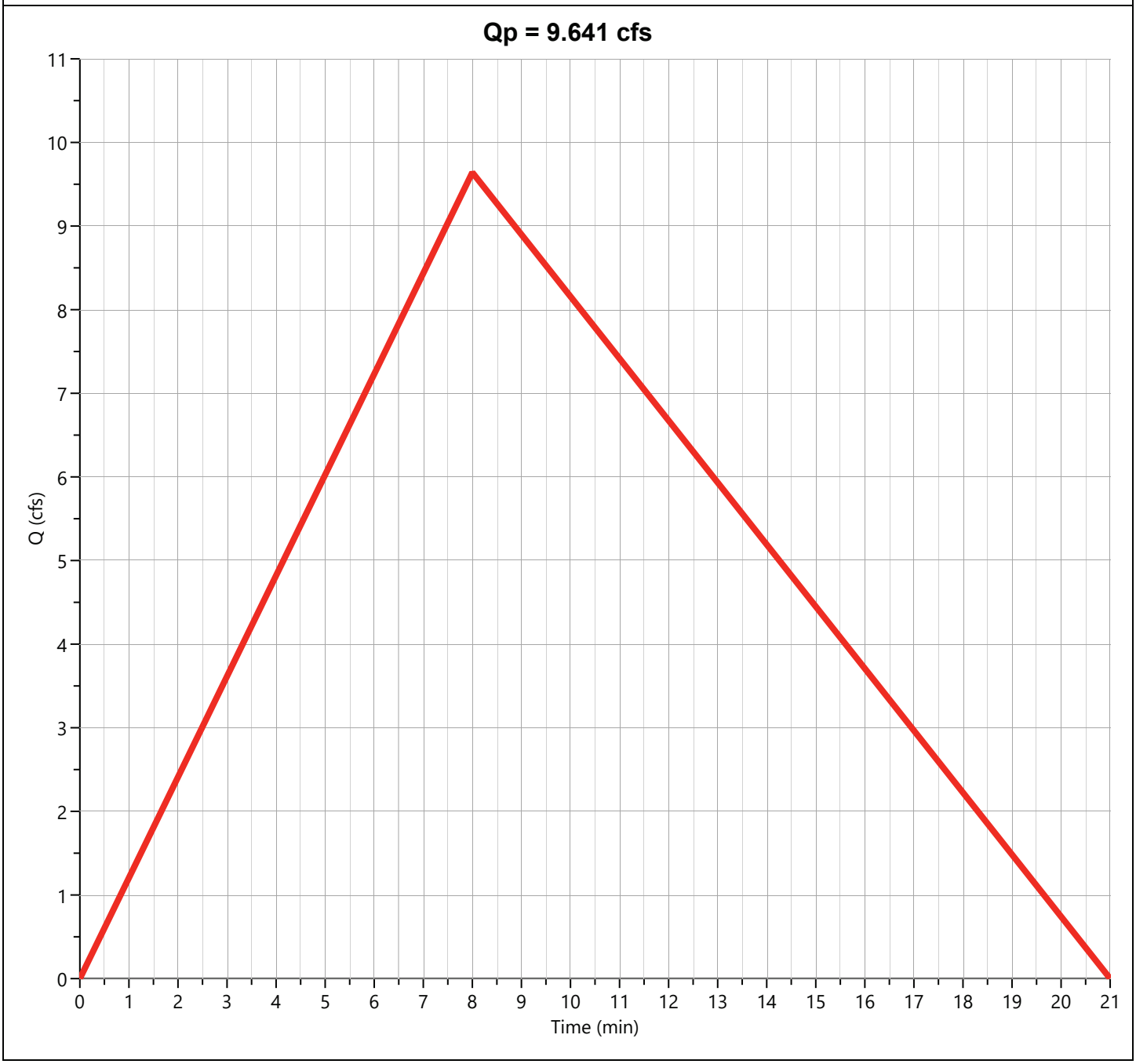
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 9.641 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 6,178 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

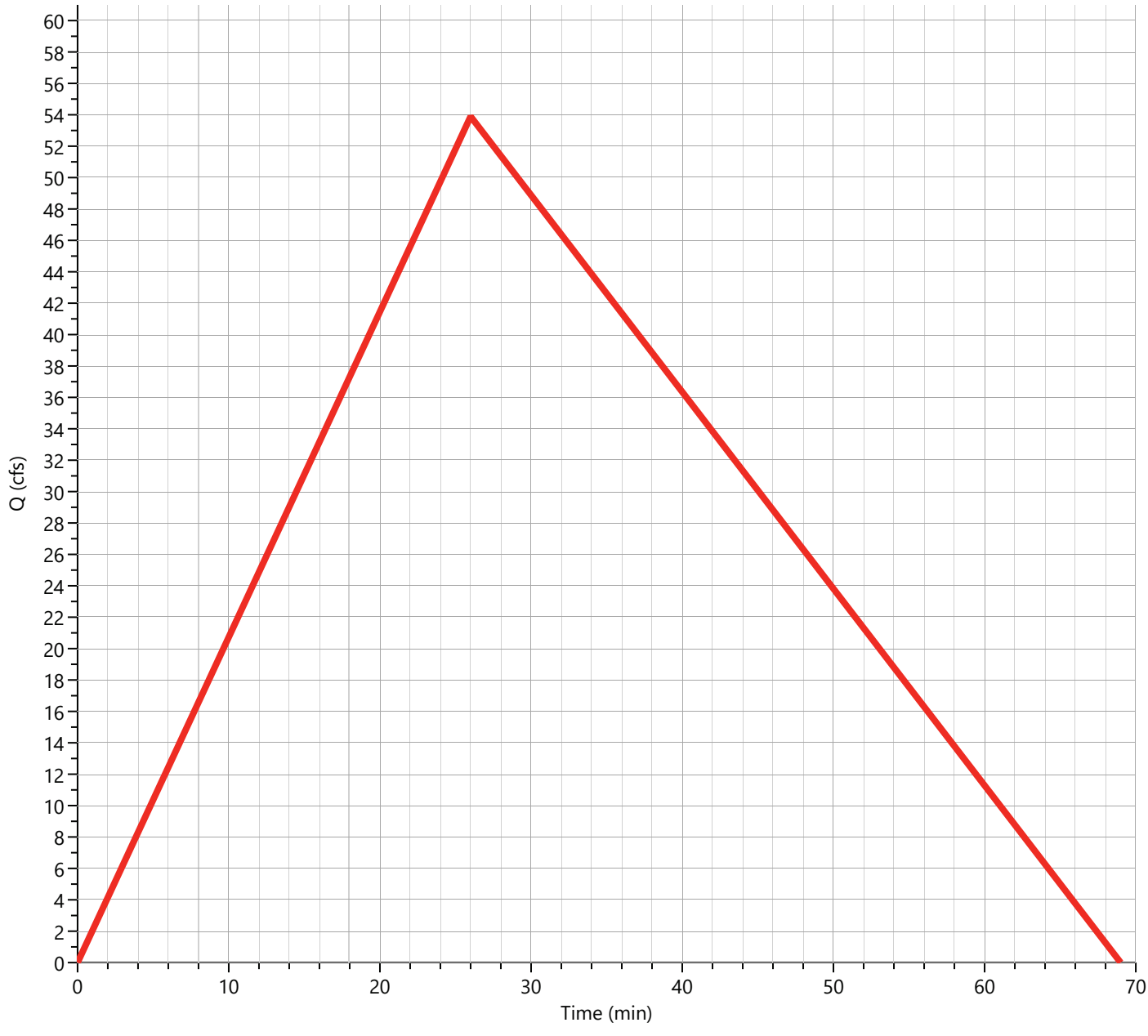
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 53.89 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.43 hrs
Time Interval	= 1 min	Runoff Volume	= 112,236 cuft
Drainage Area	= 18.36 ac	Runoff Coeff.	= 0.75
Tc Method	= User	Time of Conc. (Tc)	= 26.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.91 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

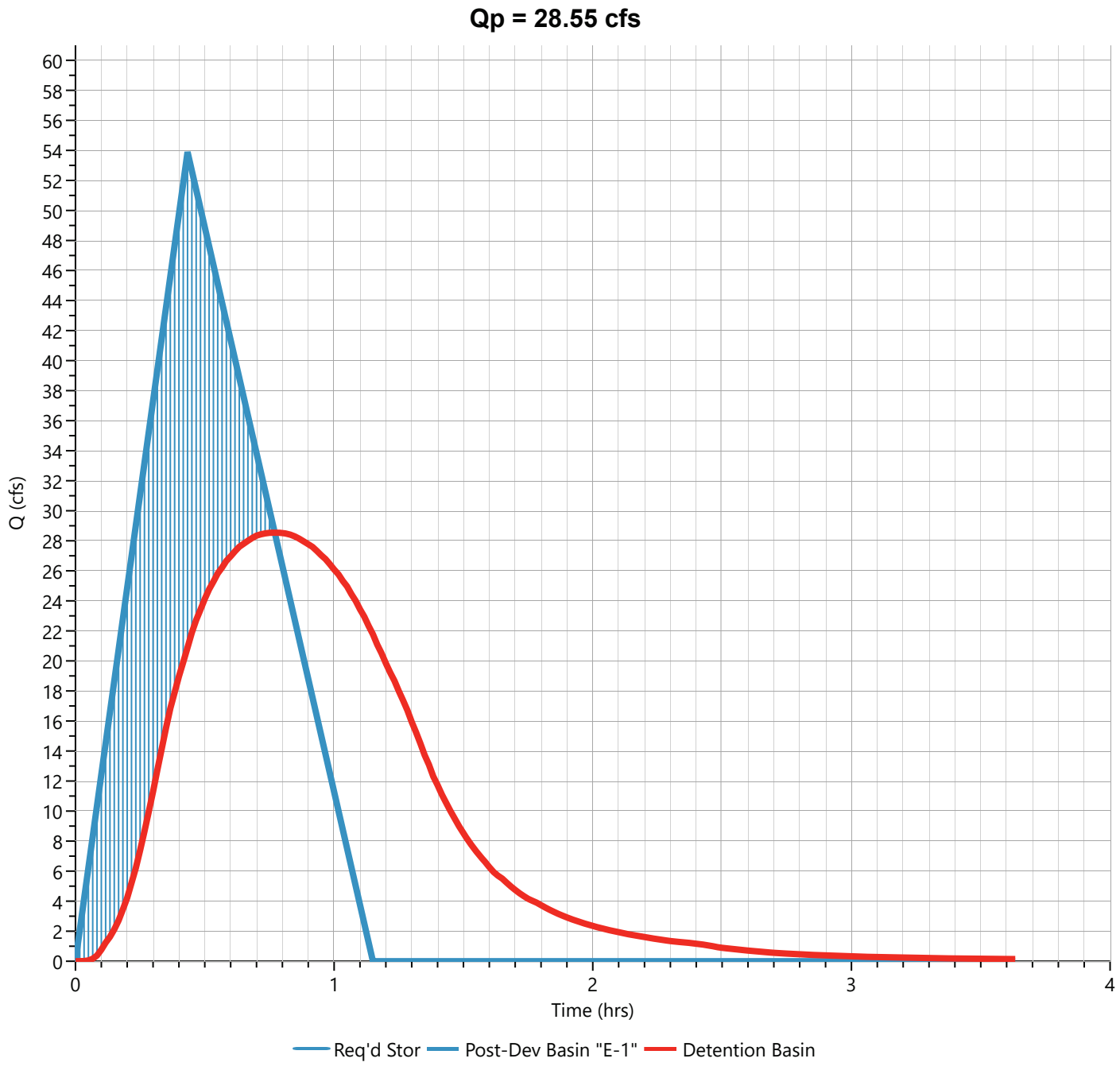
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 28.55 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.77 hrs
Time Interval	= 1 min	Hydrograph Volume	= 111,536 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 470.64 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 48,637 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 25 min



Hydrograph Report

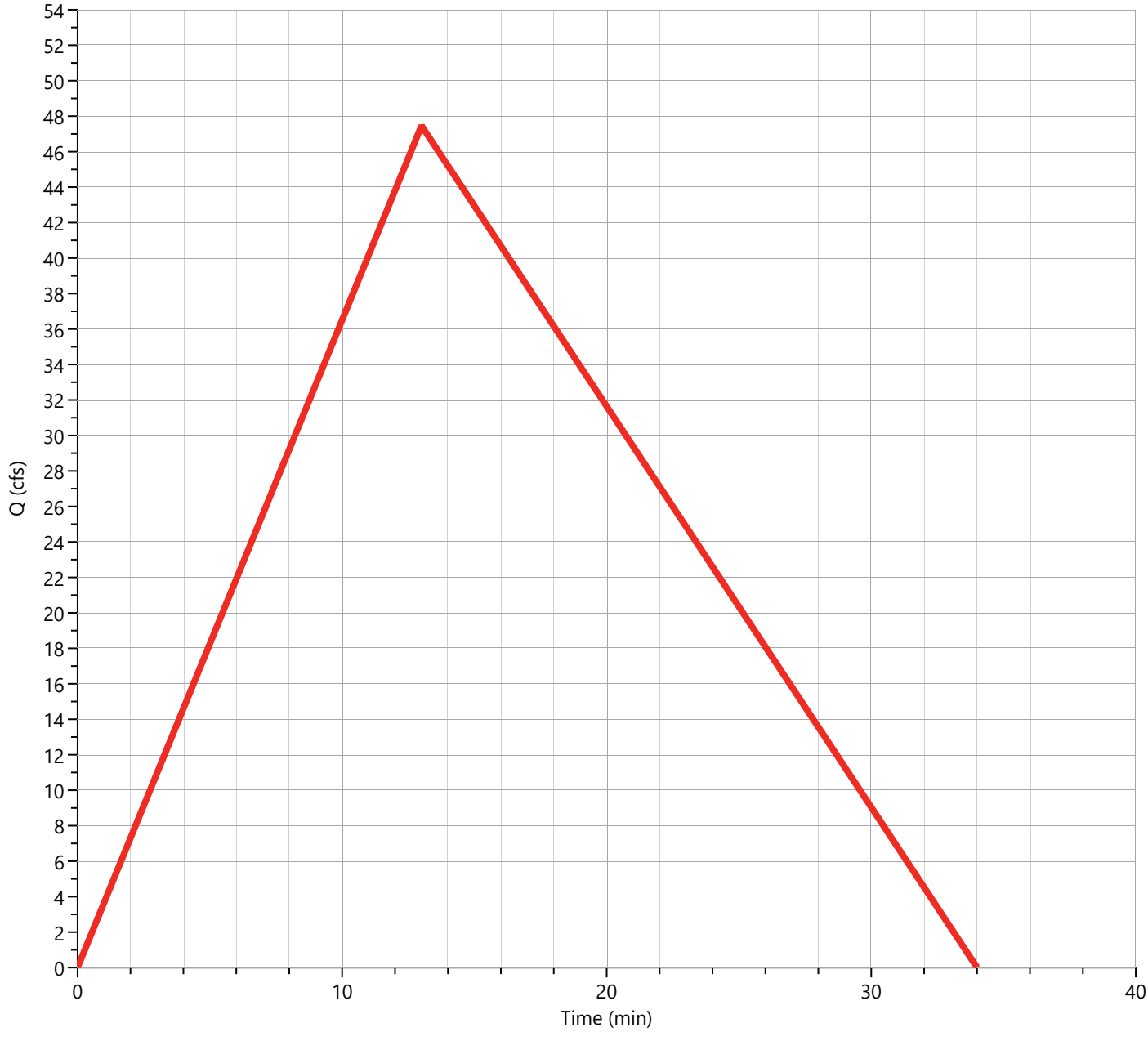
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 47.46 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 49,424 cuft
Drainage Area	= 15.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

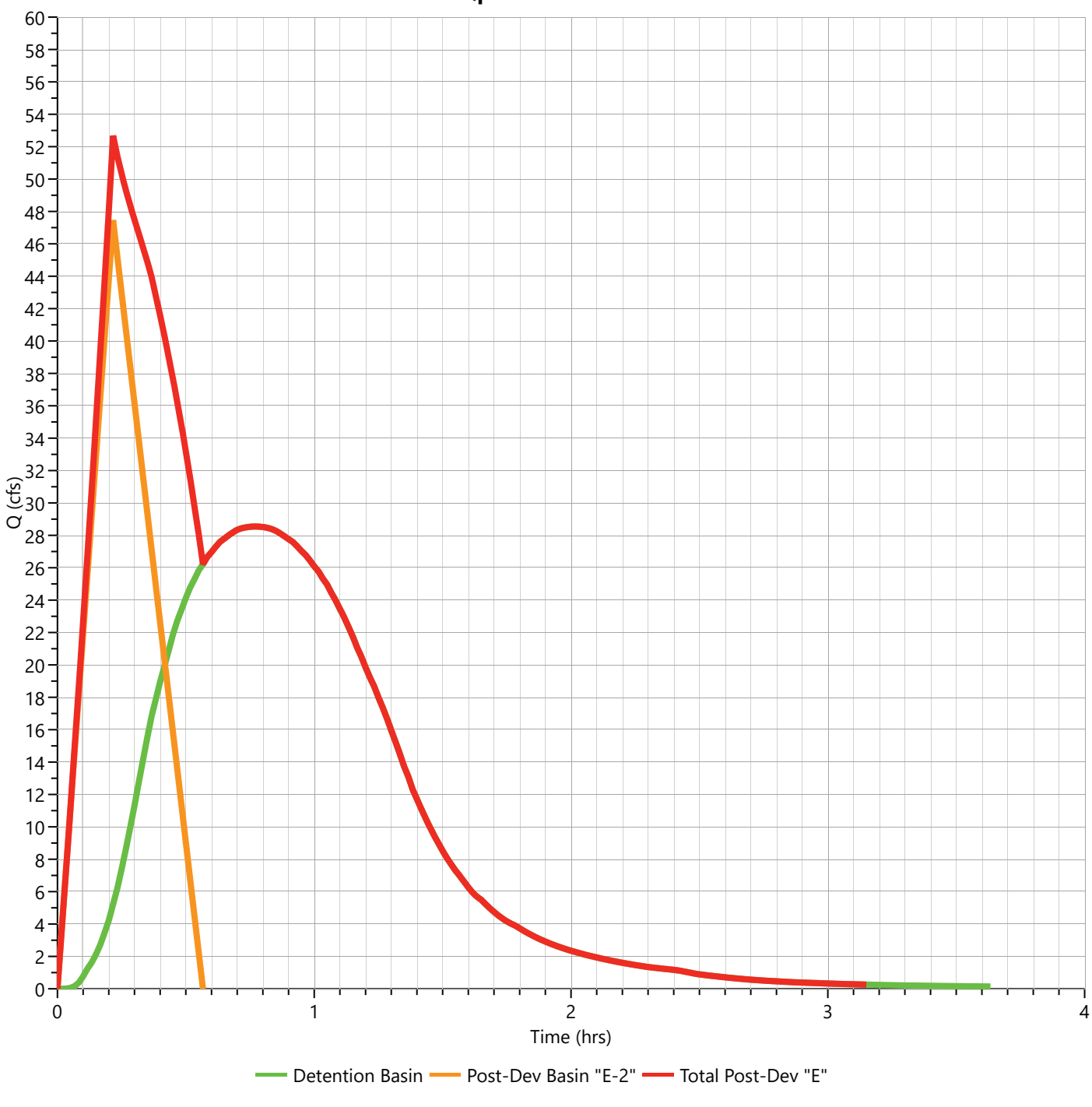
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Post-Dev "E"

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 52.67 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 159,949 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 15.86 ac



Hydrograph Report

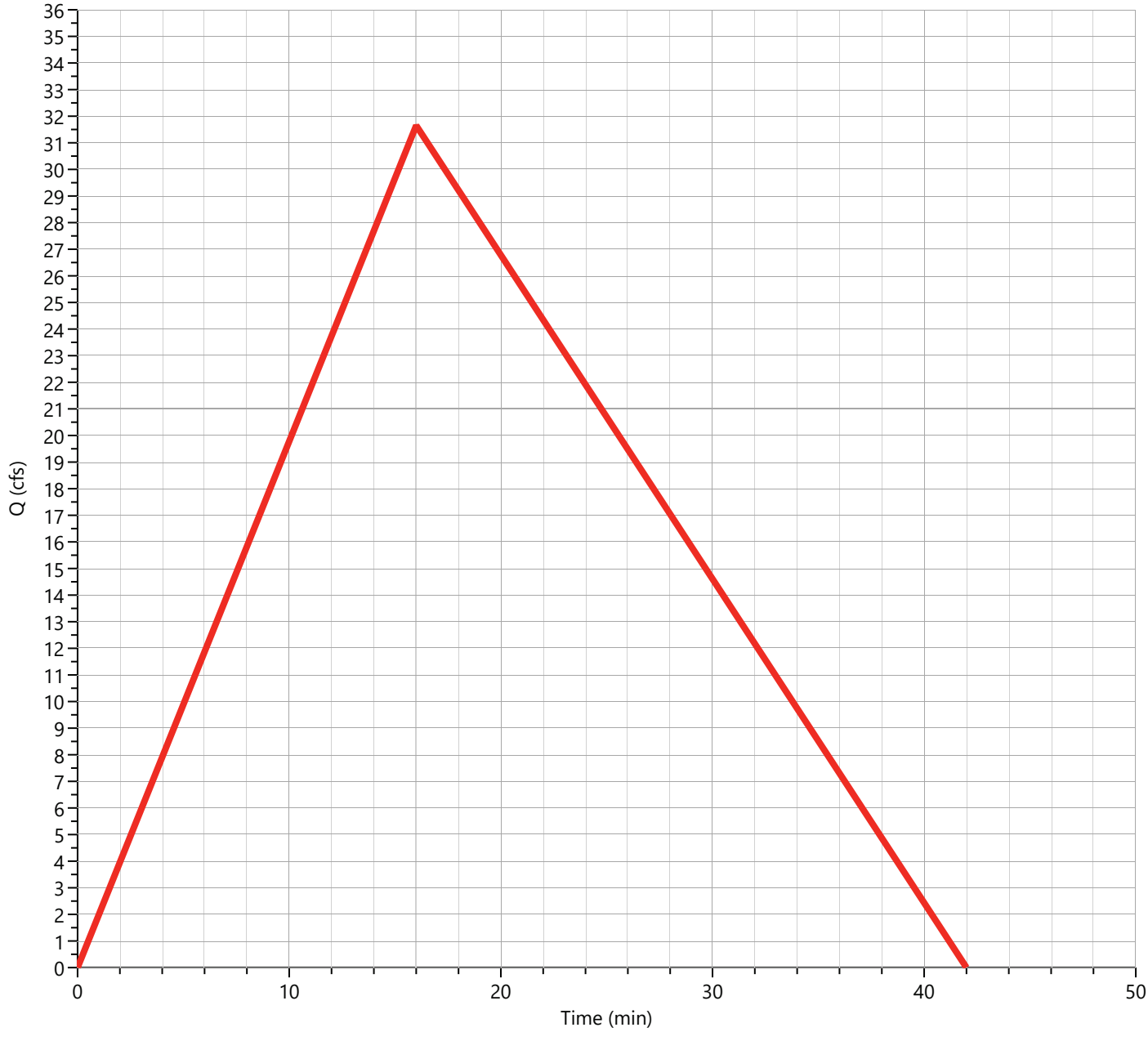
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 31.65 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 40,562 cuft
Drainage Area	= 11.61 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.87 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Design Storm Report

Custom Storm filename:

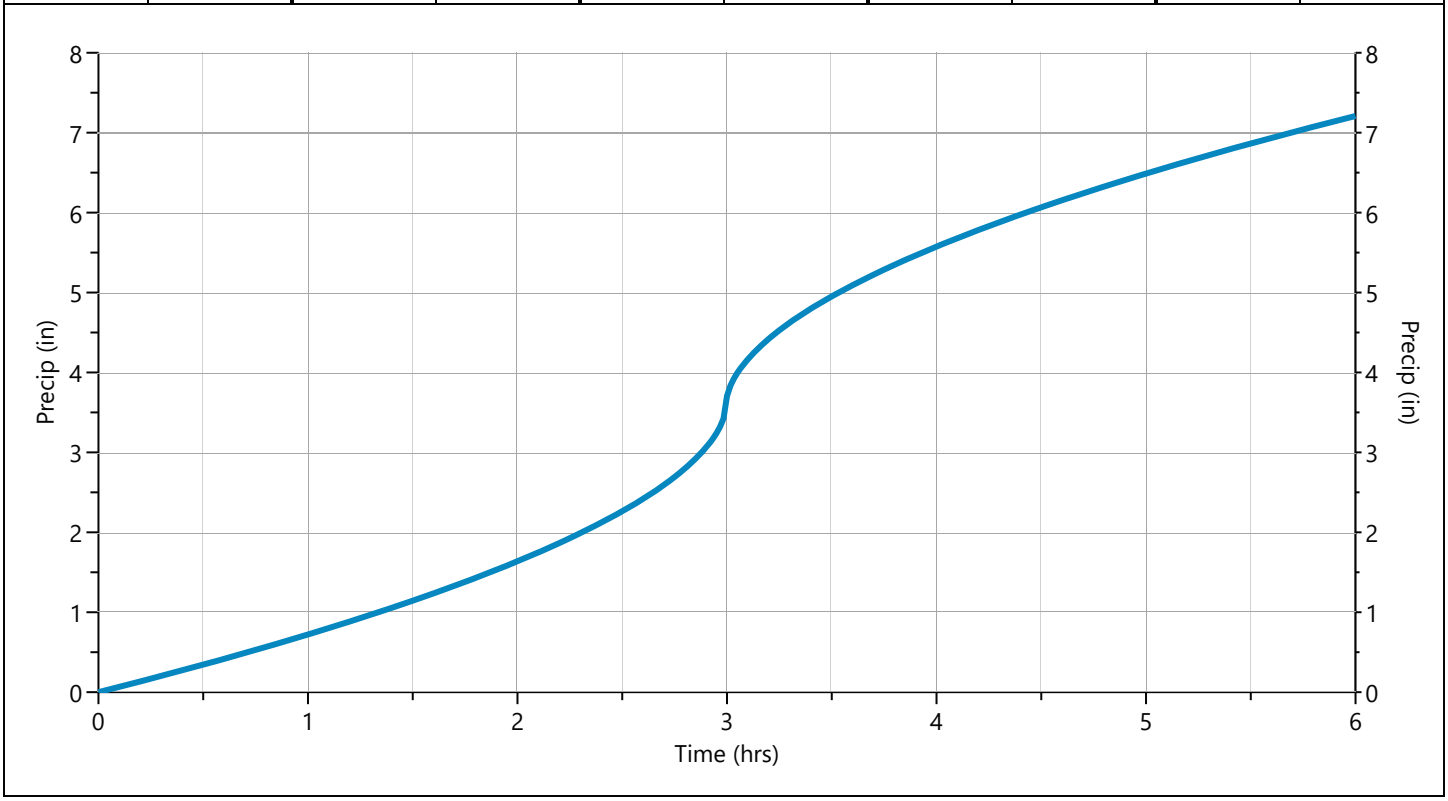
Hydrology Studio v 3.0.0.44

09-29-2026

Storm Distribution: IDF Based - Synthetic, 6-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	✔ 10-yr	25-yr	50-yr	100-yr	
6 hrs	0	5.32	0	6.37	7.21	8.30	9.12	9.85	

Incremental Rainfall Distribution, 10-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
2.50	0.024575	2.68	0.030109	2.87	0.044065	3.05	0.072251	3.23	0.035025
2.52	0.024949	2.70	0.030840	2.88	0.046700	3.07	0.062825	3.25	0.033937
2.53	0.025342	2.72	0.031631	2.90	0.049924	3.08	0.056483	3.27	0.032951
2.55	0.025755	2.73	0.032491	2.92	0.053996	3.10	0.051831	3.28	0.032052
2.57	0.026192	2.75	0.033432	2.93	0.059383	3.12	0.048225	3.30	0.031227
2.58	0.026653	2.77	0.034467	2.95	0.067008	3.13	0.045321	3.32	0.030468
2.60	0.027142	2.78	0.035612	2.97	0.079104	3.15	0.042915	3.33	0.029764
2.62	0.027660	2.80	0.036891	2.98	0.103333	3.17	0.040877	3.35	0.029111
2.63	0.028212	2.82	0.038330	**3.00**	**0.282025**	3.18	0.039122	3.37	0.028502
2.65	0.028801	2.83	0.039968	3.02	0.131064	3.20	0.037588	3.38	0.027932
2.67	0.029432	2.85	0.041856	3.03	0.088640	3.22	0.036234	3.40	0.027397



Hydrograph 25-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	13.13	0.18	11,572	----		
2	Rational	Pre-Dev Basin "B"	44.15	0.25	53,043	----		
3	Rational	Pre-Dev Basin "C"	24.90	0.18	21,943	----		
4	Rational	Pre-Dev Basin "D"	11.26	0.13	7,218	----		
5	Rational	Pre-Dev Basin "E-1"	35.65	0.20	34,268	----		
6	Rational	Pre-Dev Basin "E-2"	60.55	0.22	63,053	----		
7	Junction	Total Pre Basin "E"	94.42	0.22	95,989	5, 6		
8	Rational	Pre-Dev Basin "F"	38.07	0.28	51,833	----		
9	Rational	Post-Dev Basin A	12.47	0.25	14,979	----		
10	Rational	Post-Dev Basin B	34.13	0.35	57,410	----		
11	Rational	Post-Dev Basin "C"	25.47	0.18	22,441	----		
12	Rational	Post-Dev Basin "D"	11.08	0.13	7,098	----		
13	Rational	Post-Dev Basin "E-1"	61.96	0.43	129,045	----		
14	Pond Route	Detention Basin	31.55	0.78	128,243	13	471.22	57,532
15	Rational	Post-Dev Basin "E-2"	54.55	0.22	56,801	----		
16	Junction	Total Post-Dev "E"	60.76	0.22	183,883	14, 15		
17	Rational	Post-Dev Basin "F"	36.38	0.27	46,623	----		

Hydrograph Report

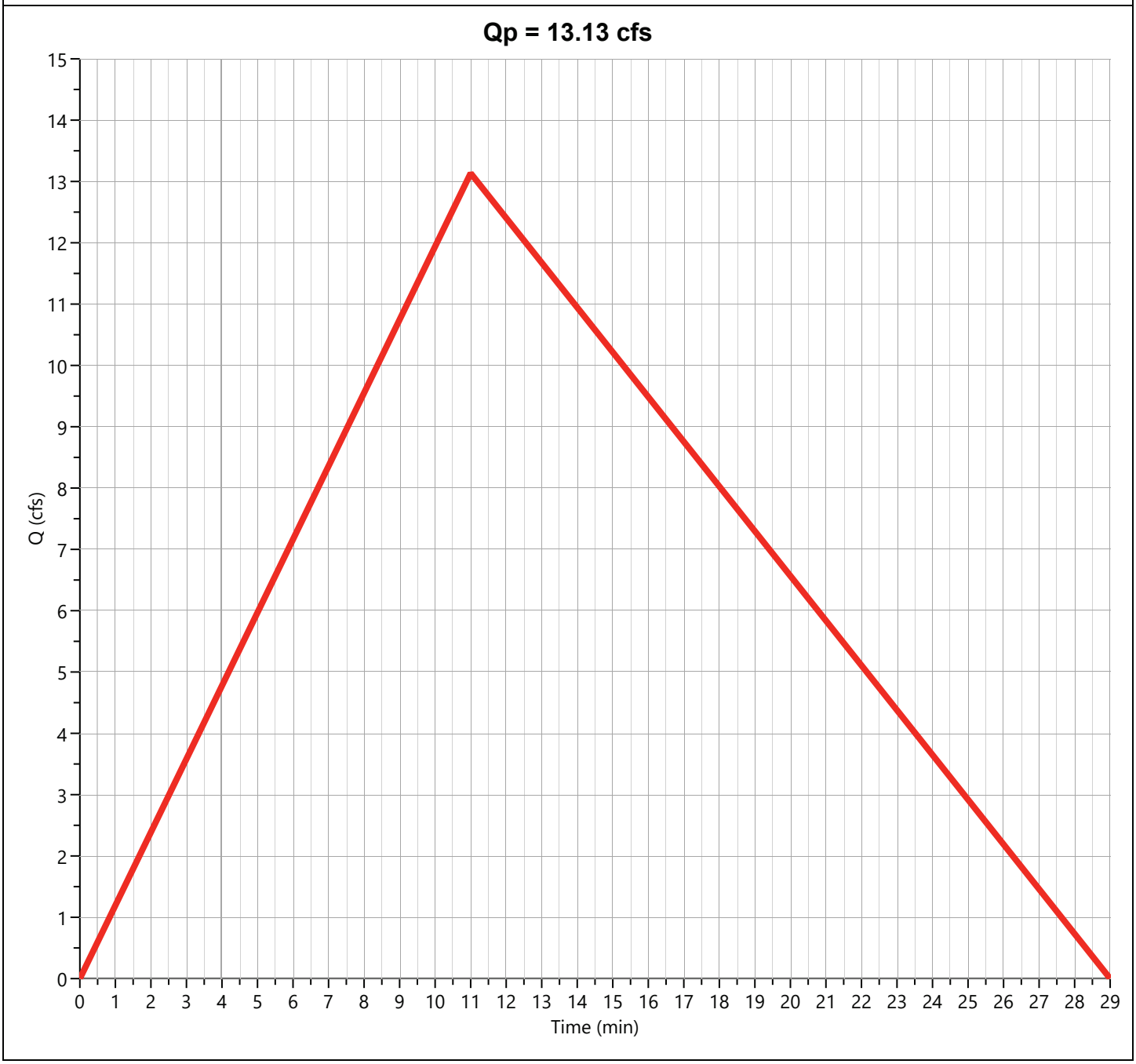
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 13.13 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 11,572 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

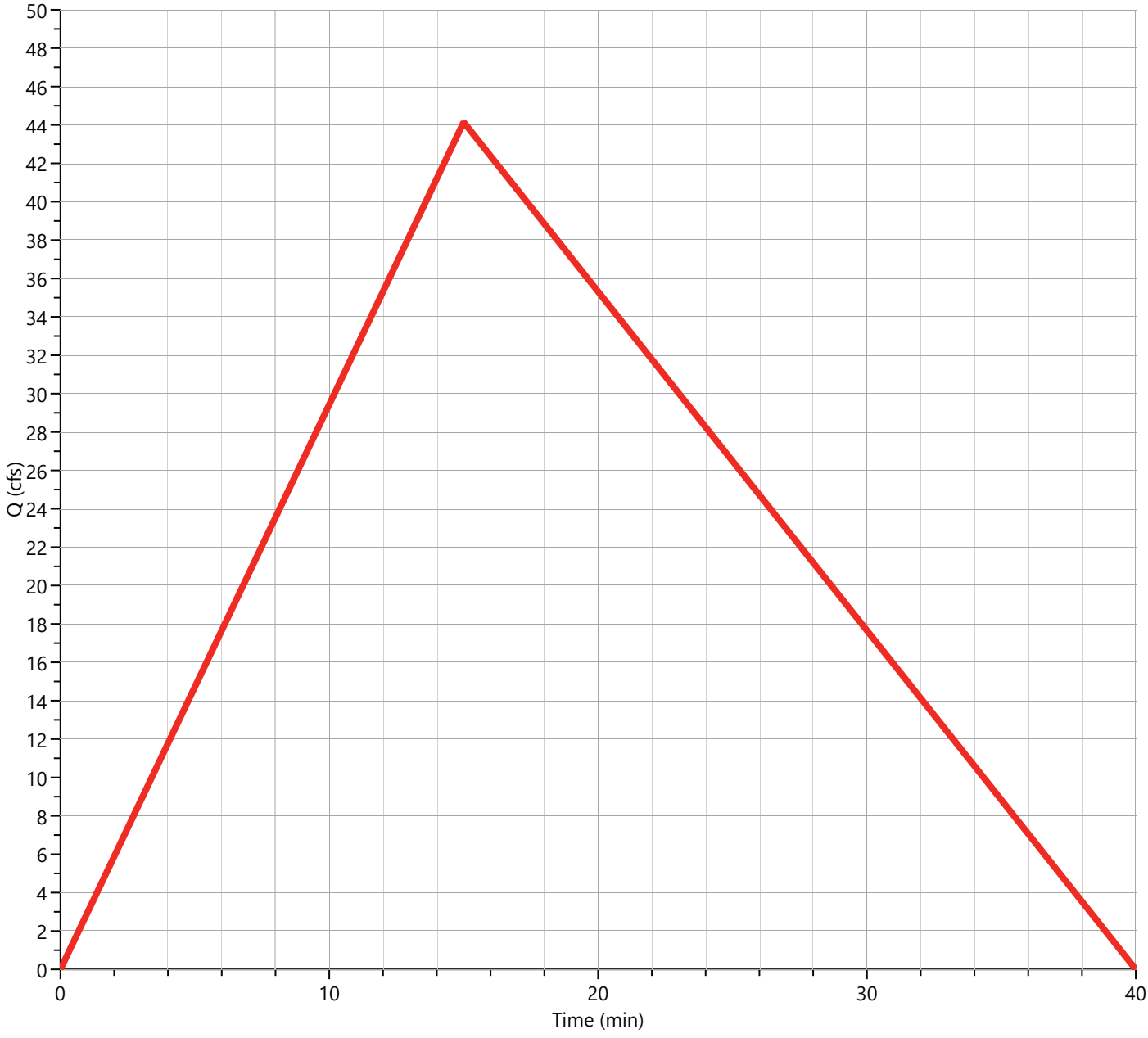
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 44.15 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 53,043 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

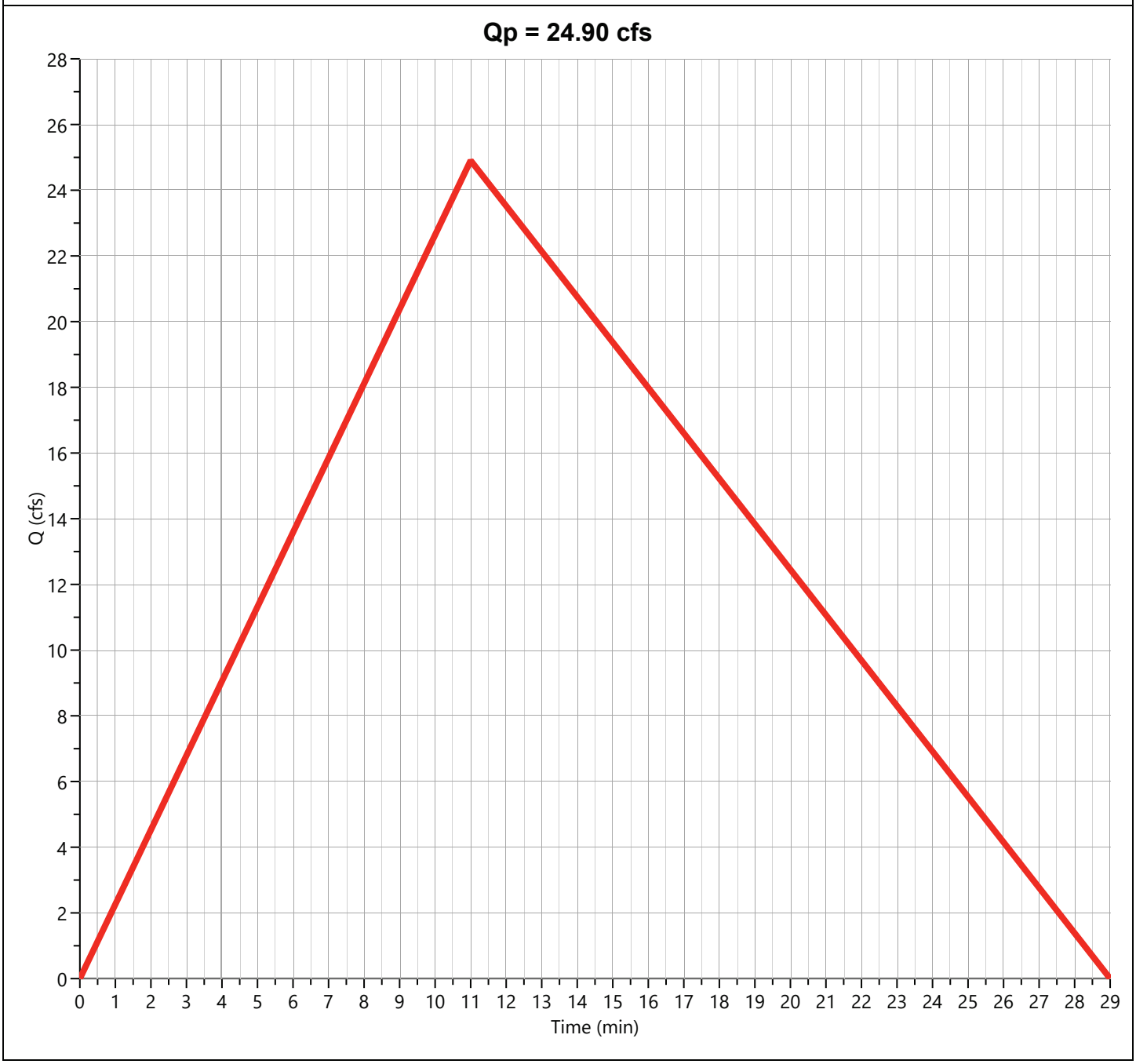
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 24.90 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 21,943 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

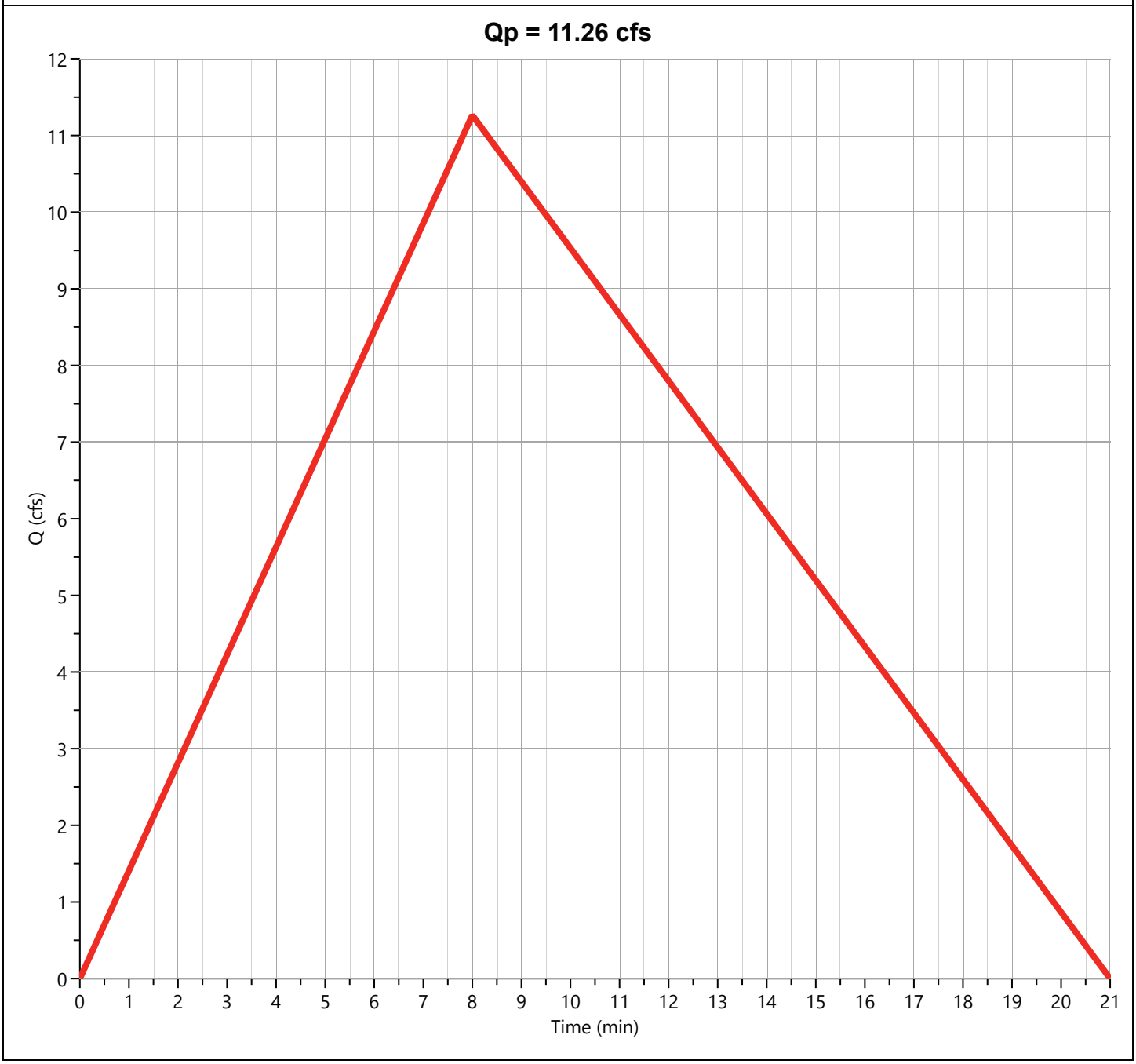
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 11.26 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,218 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

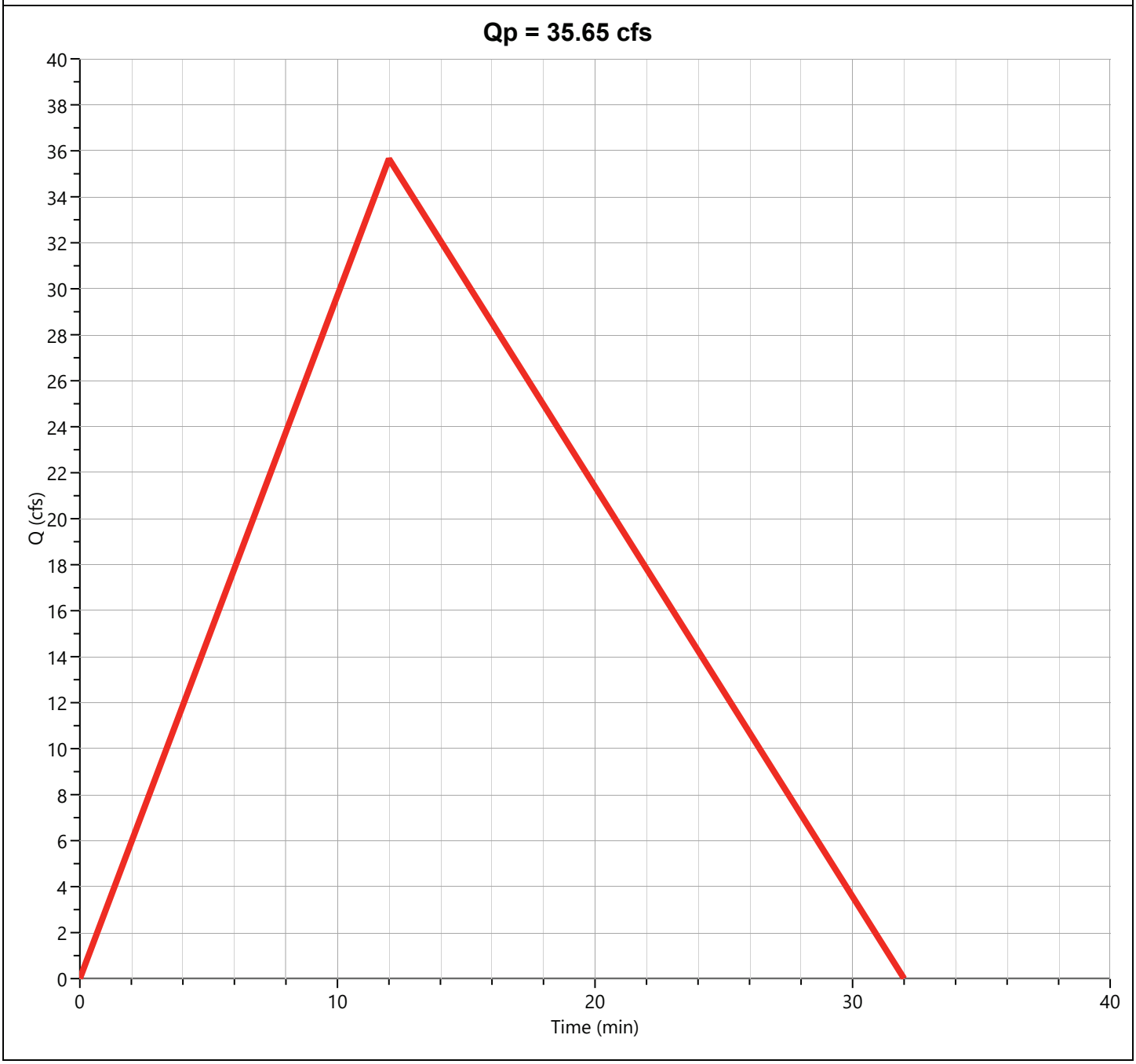
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 35.65 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 34,268 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.37 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

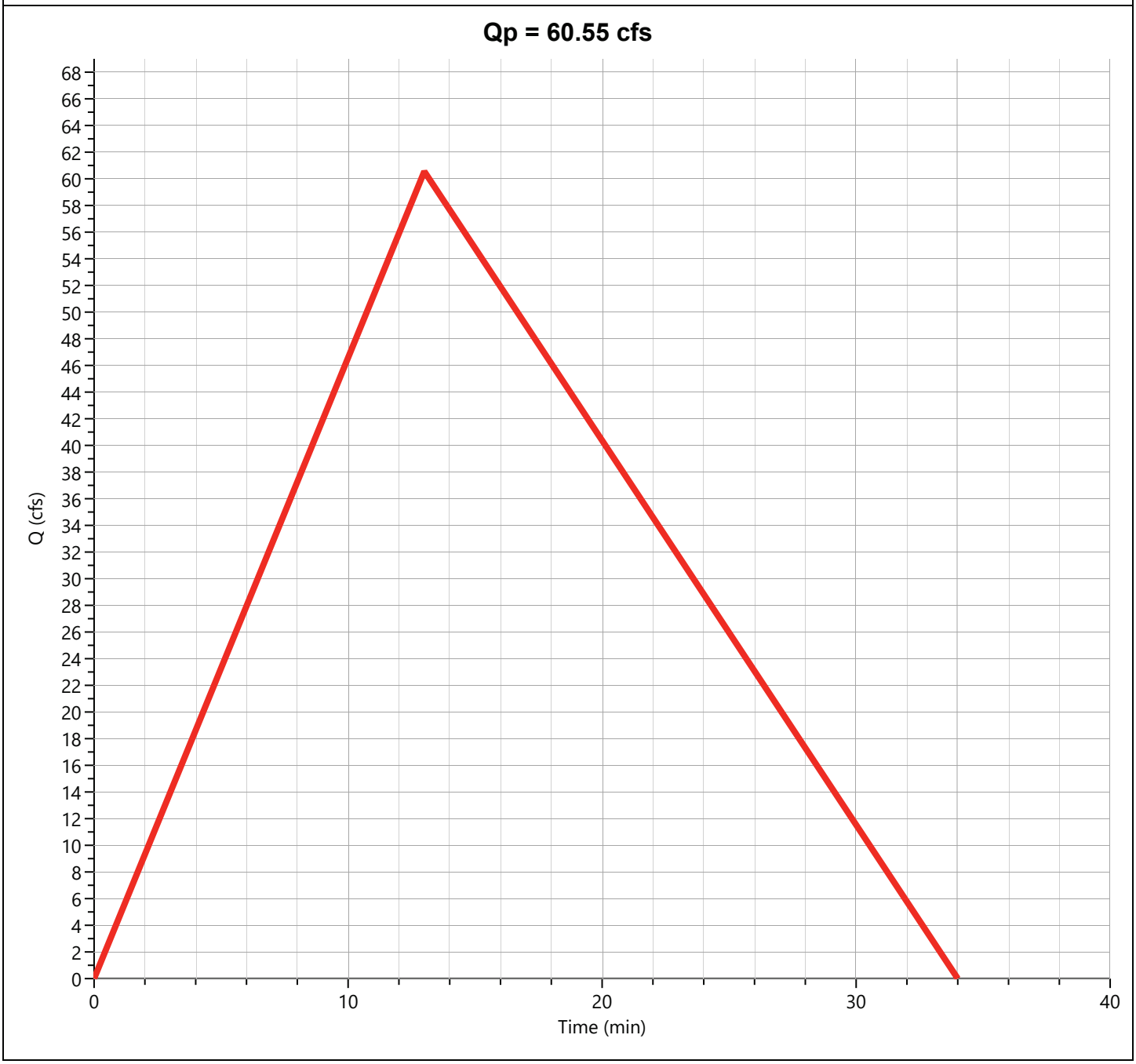
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 60.55 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 63,053 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

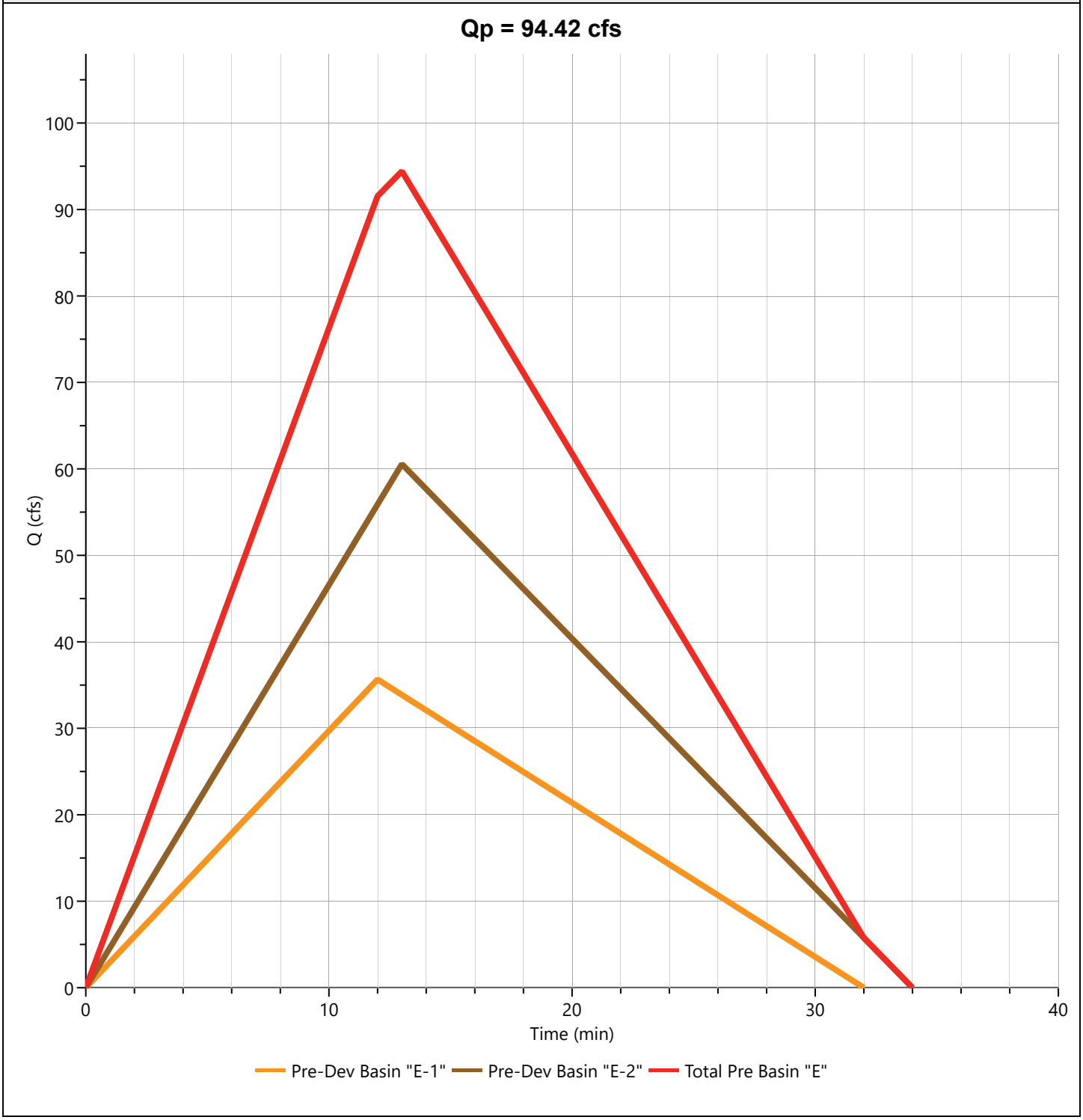
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Pre Basin "E"

Hyd. No. 7

Hydrograph Type	= Junction	Peak Flow	= 94.42 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 95,989 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Hydrograph Report

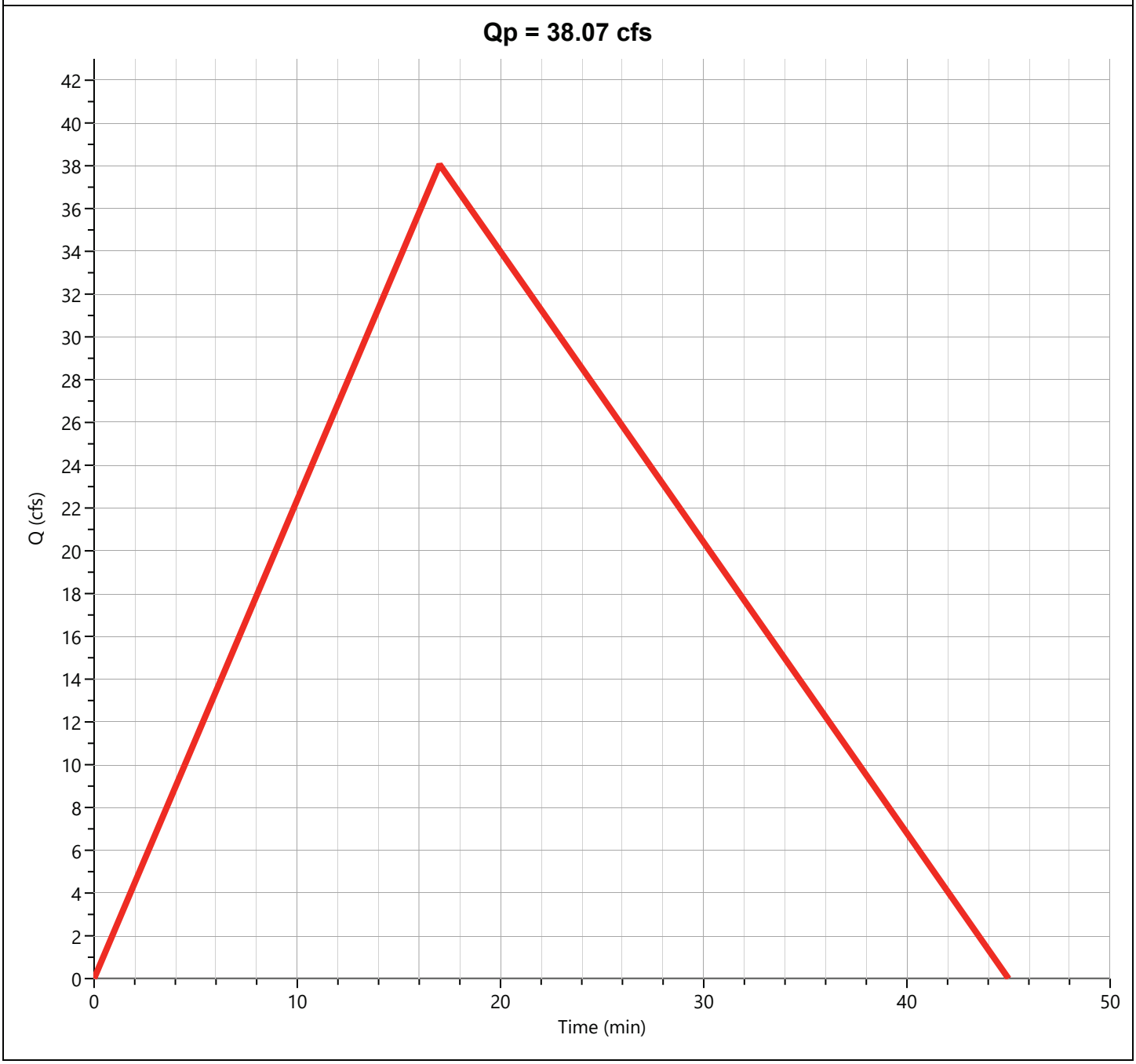
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 38.07 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 51,833 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.45 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

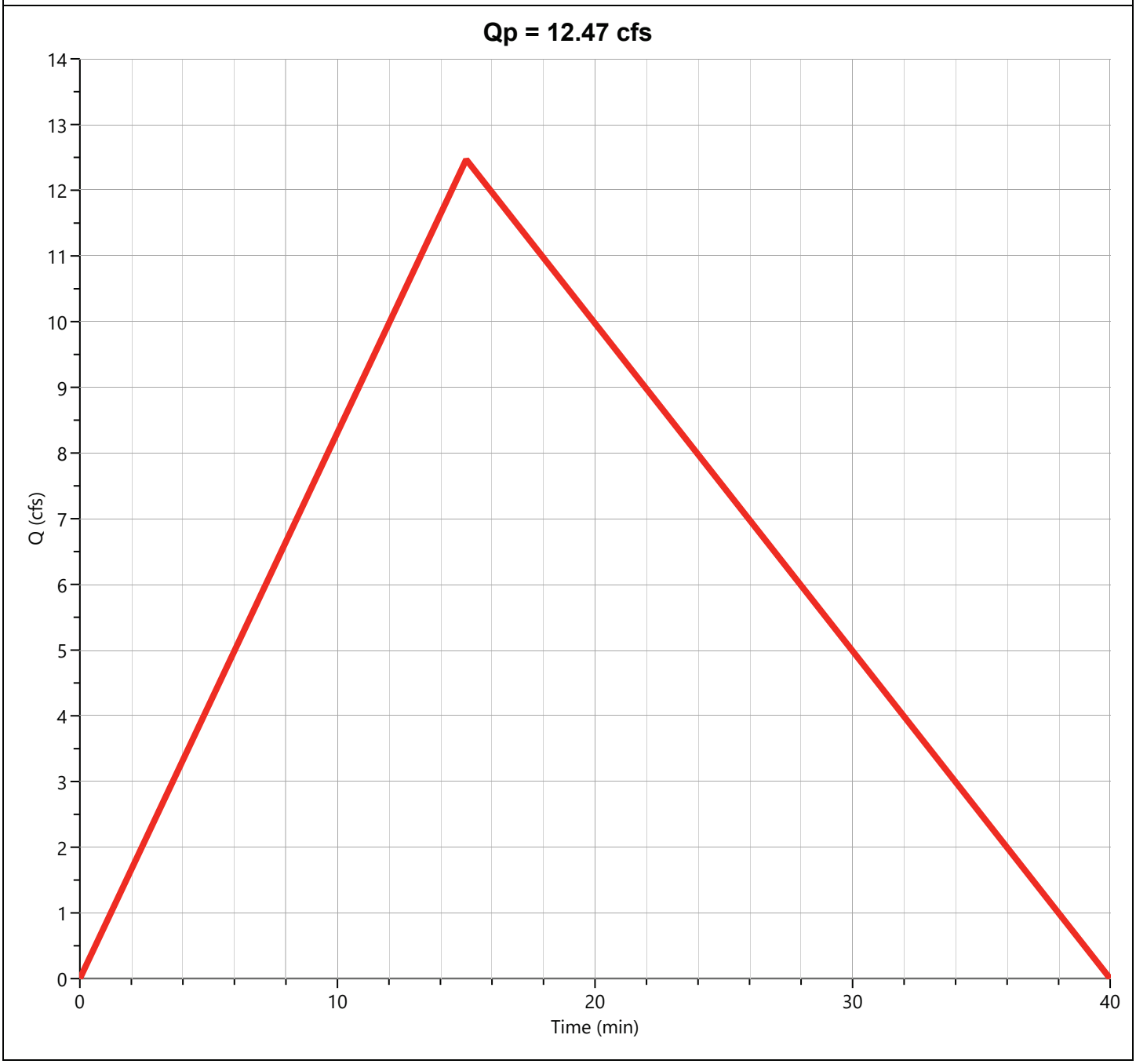
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 12.47 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 14,979 cuft
Drainage Area	= 3.33 ac	Runoff Coeff.	= 0.65
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

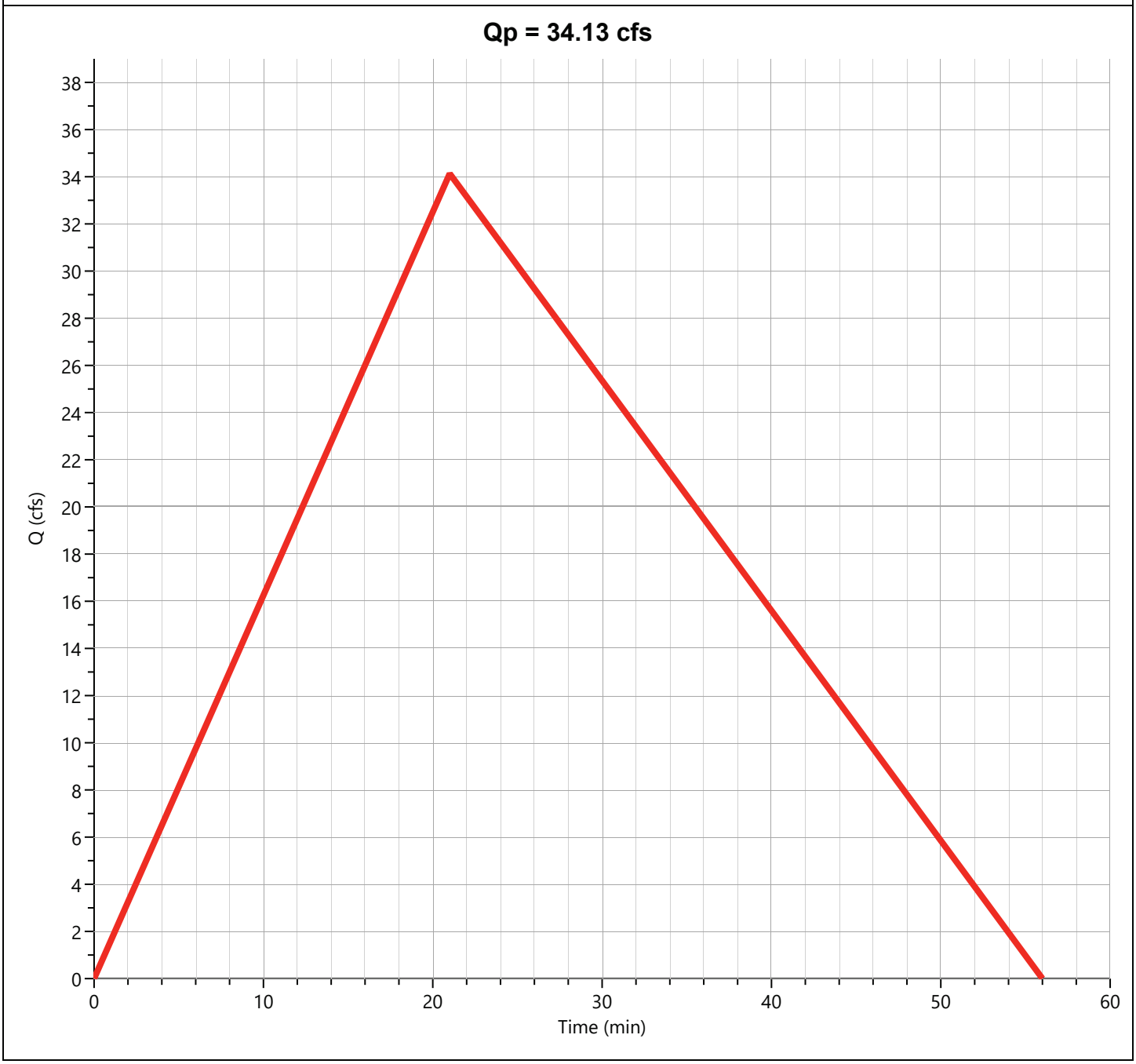
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 34.13 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Runoff Volume	= 57,410 cuft
Drainage Area	= 12.53 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 21.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.95 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

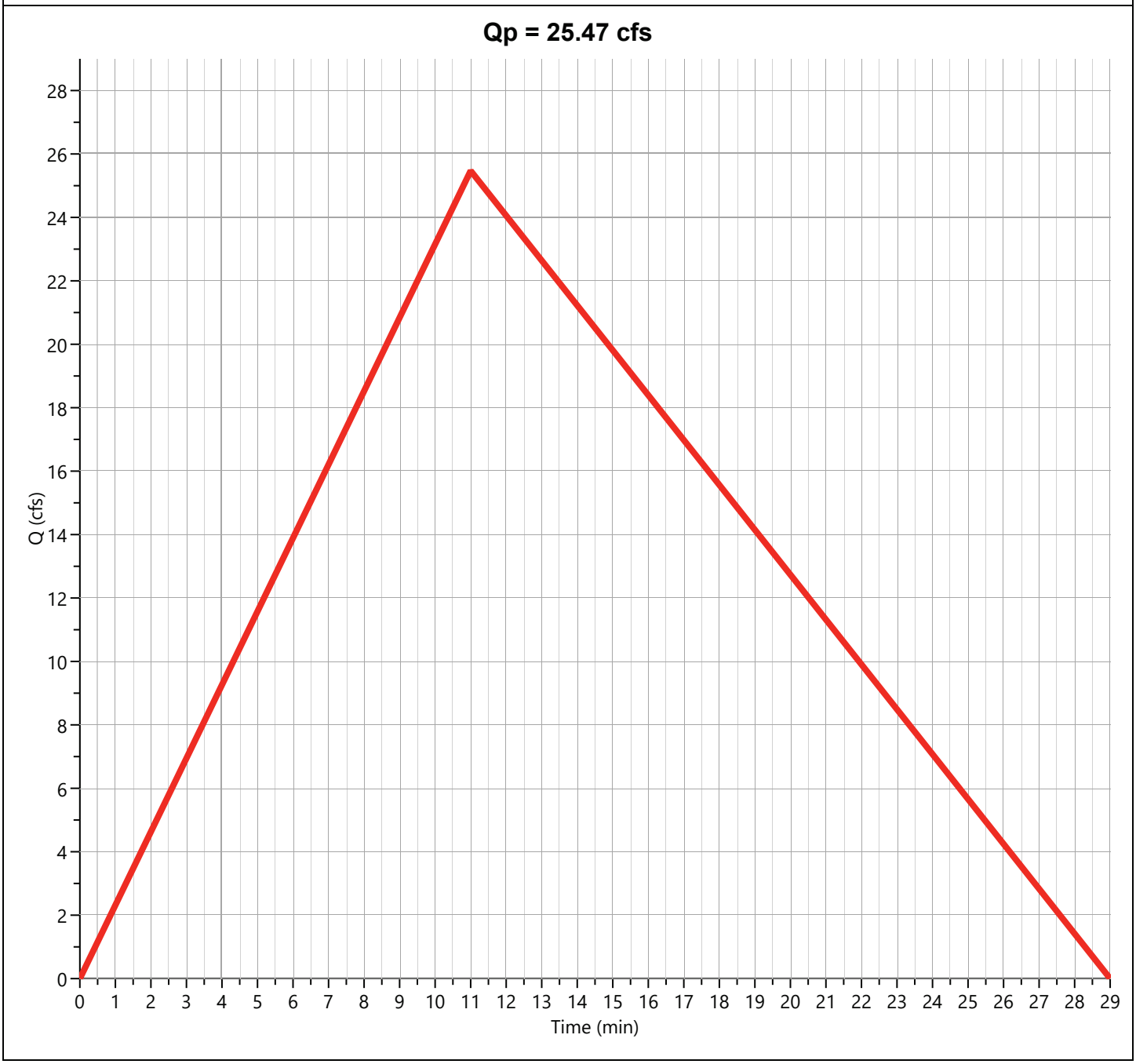
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 25.47 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 22,441 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

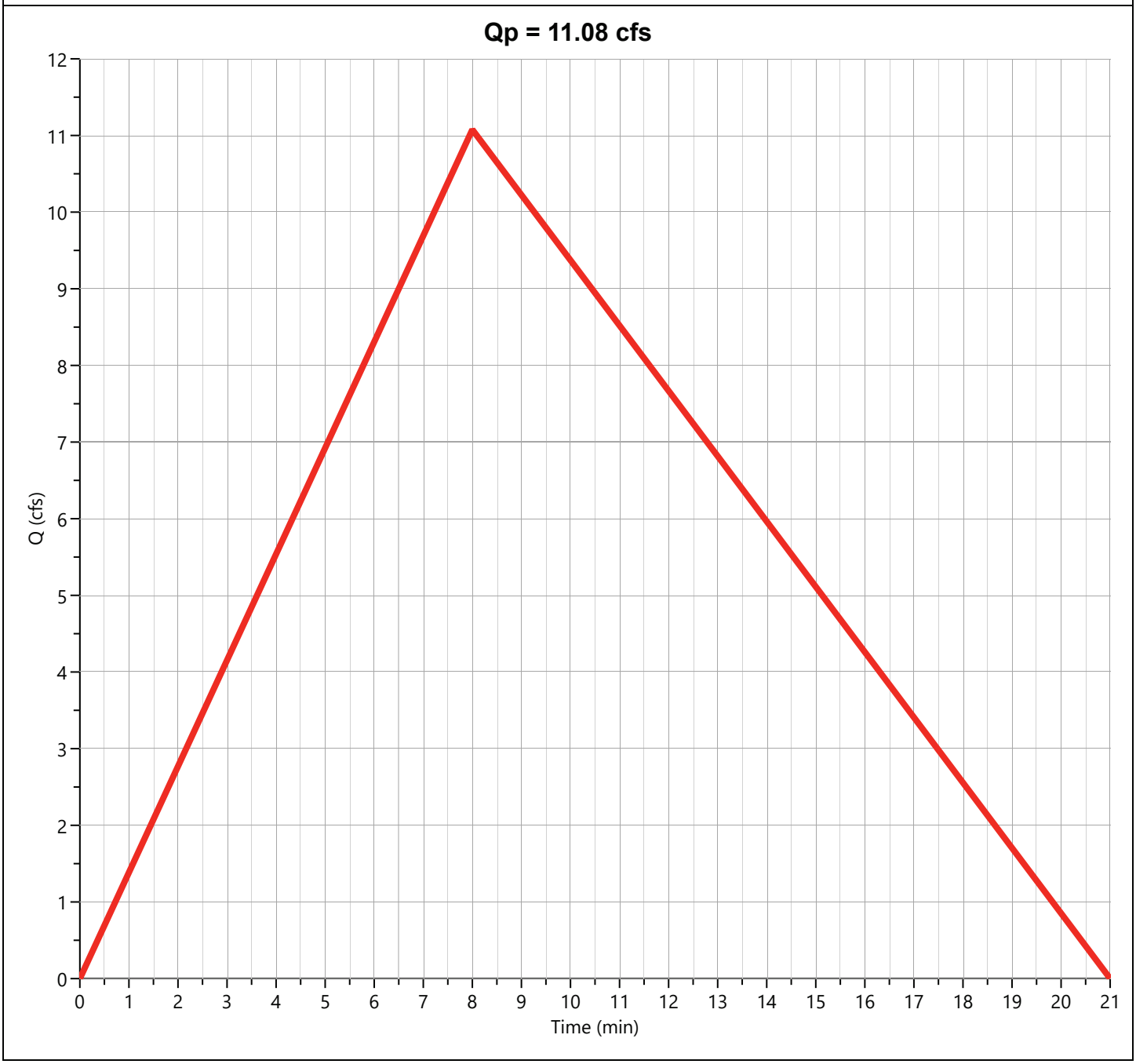
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 11.08 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,098 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

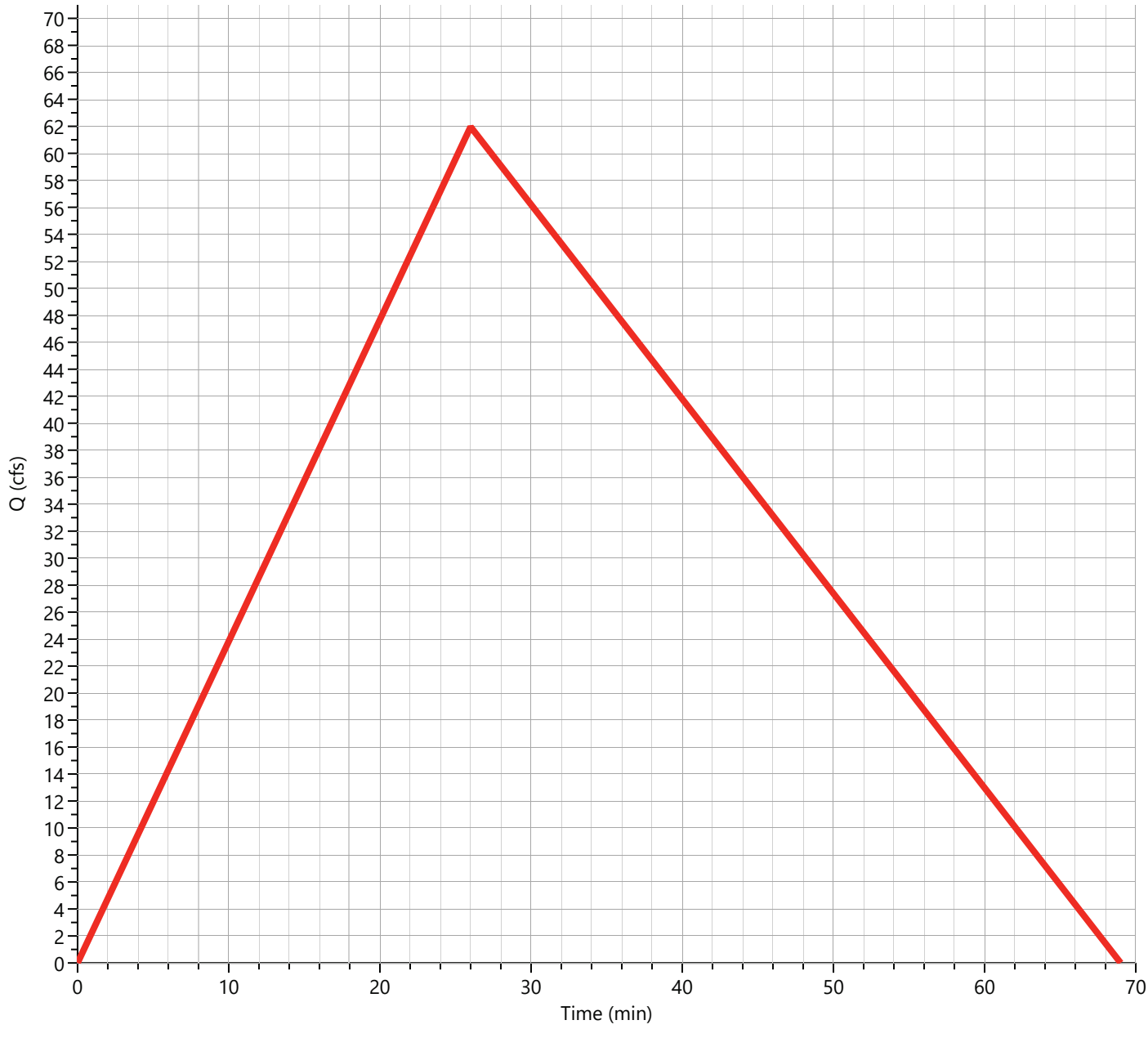
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 61.96 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.43 hrs
Time Interval	= 1 min	Runoff Volume	= 129,045 cuft
Drainage Area	= 18.36 ac	Runoff Coeff.	= 0.75
Tc Method	= User	Time of Conc. (Tc)	= 26.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.50 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

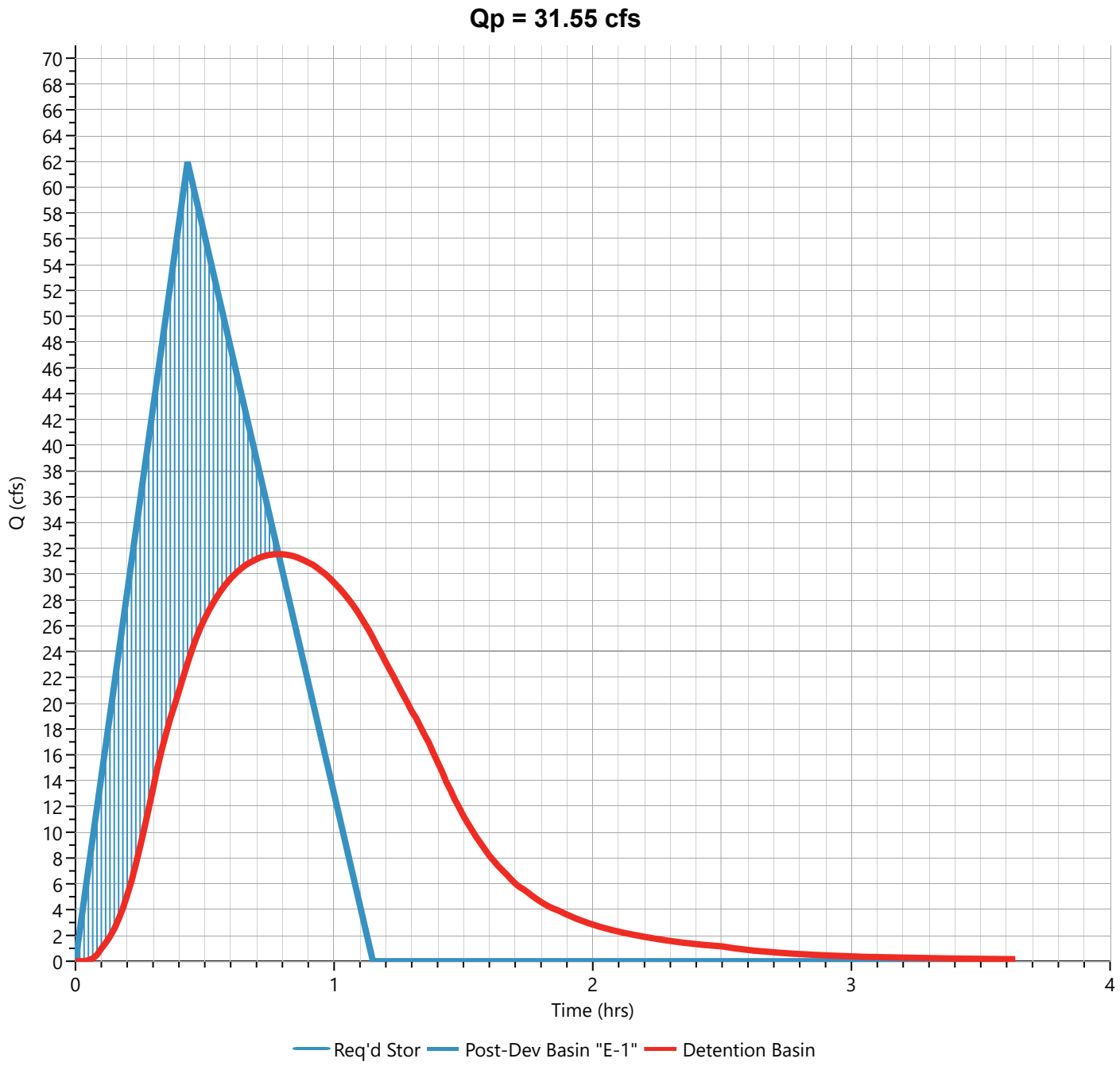
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 31.55 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 128,243 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 471.22 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 57,532 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 26 min



Hydrograph Report

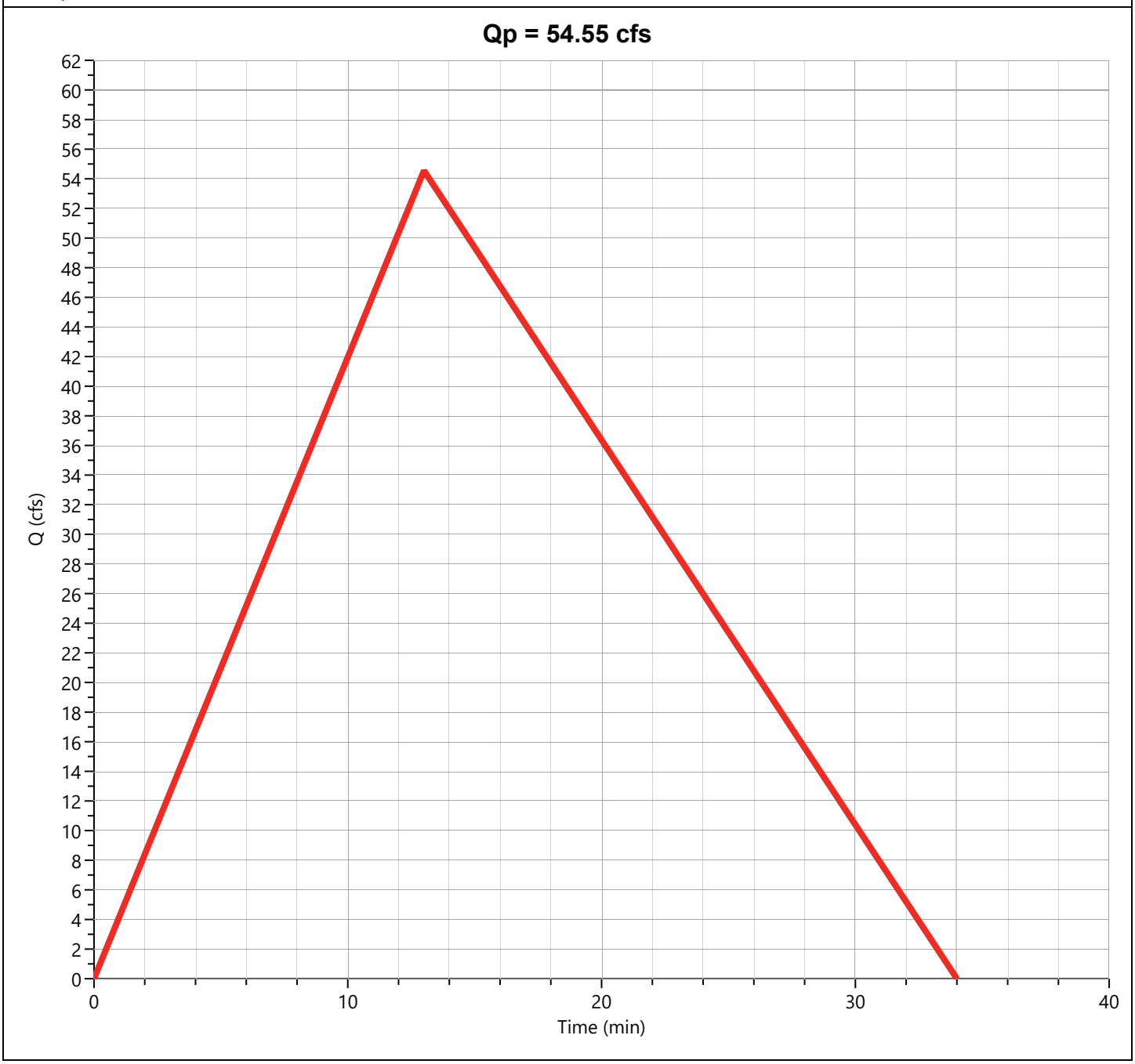
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 54.55 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 56,801 cuft
Drainage Area	= 15.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

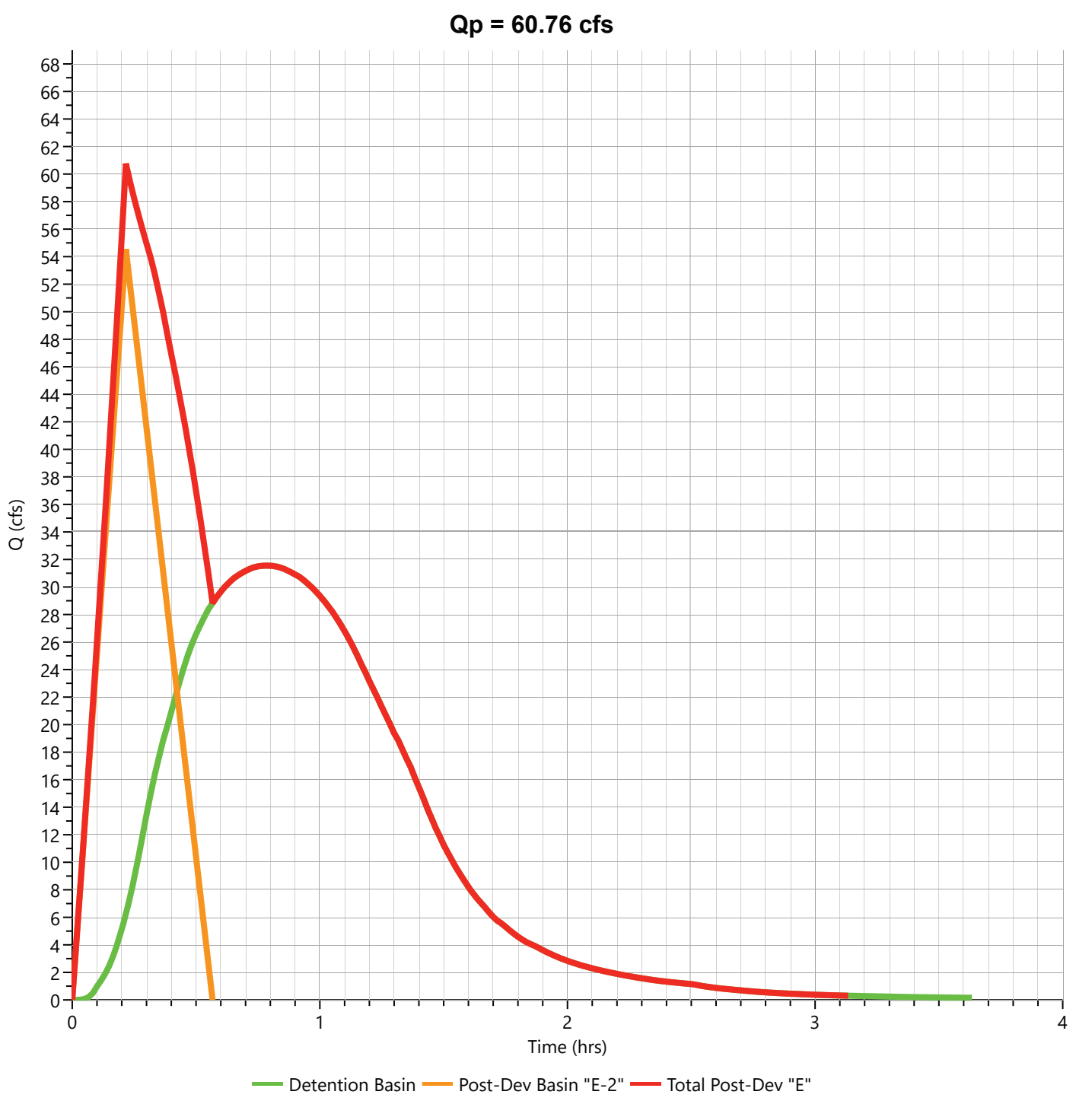
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Post-Dev "E"

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 60.76 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 183,883 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 15.86 ac



Hydrograph Report

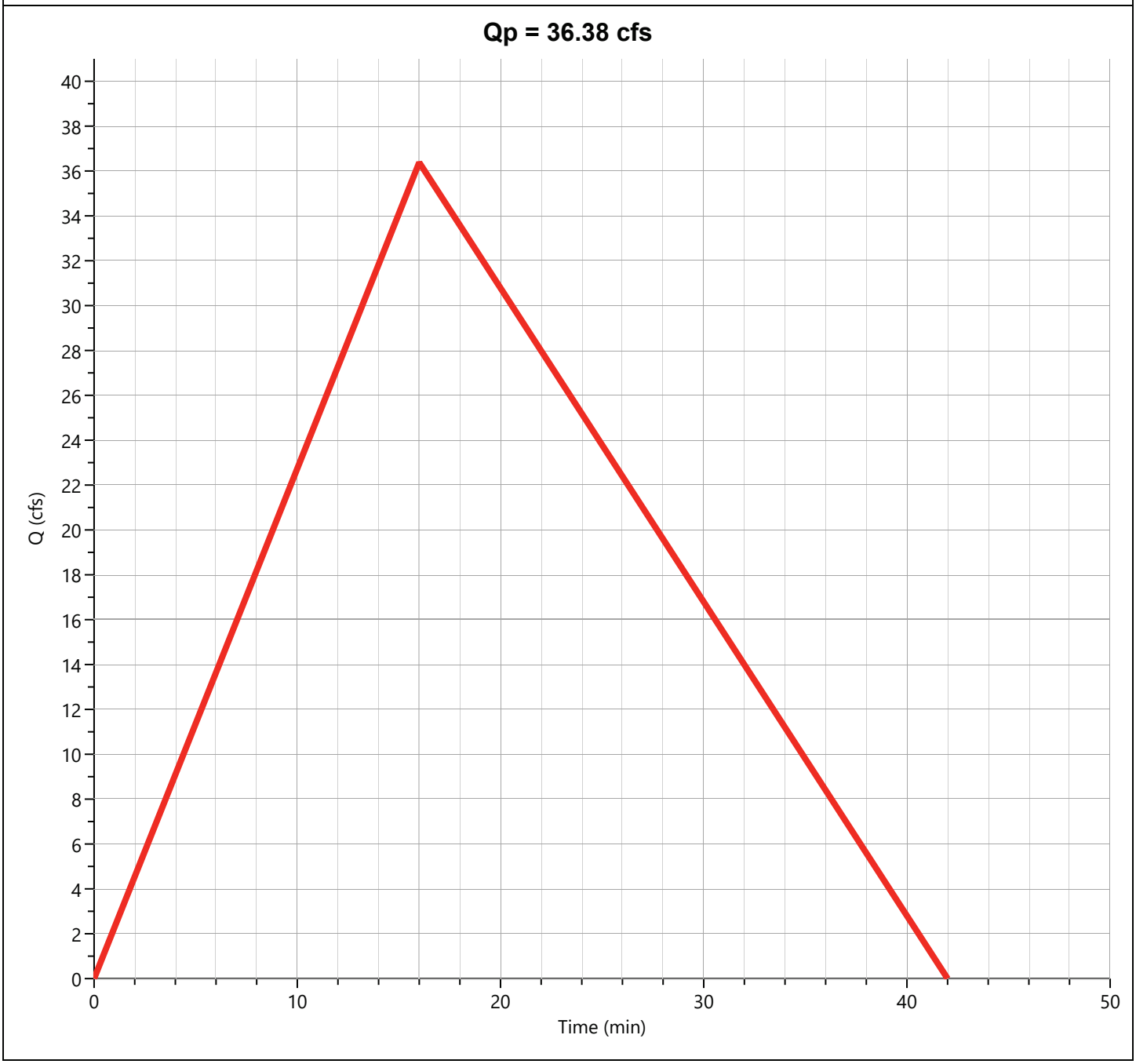
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 36.38 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 46,623 cuft
Drainage Area	= 11.61 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.60 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Design Storm Report

Custom Storm filename:

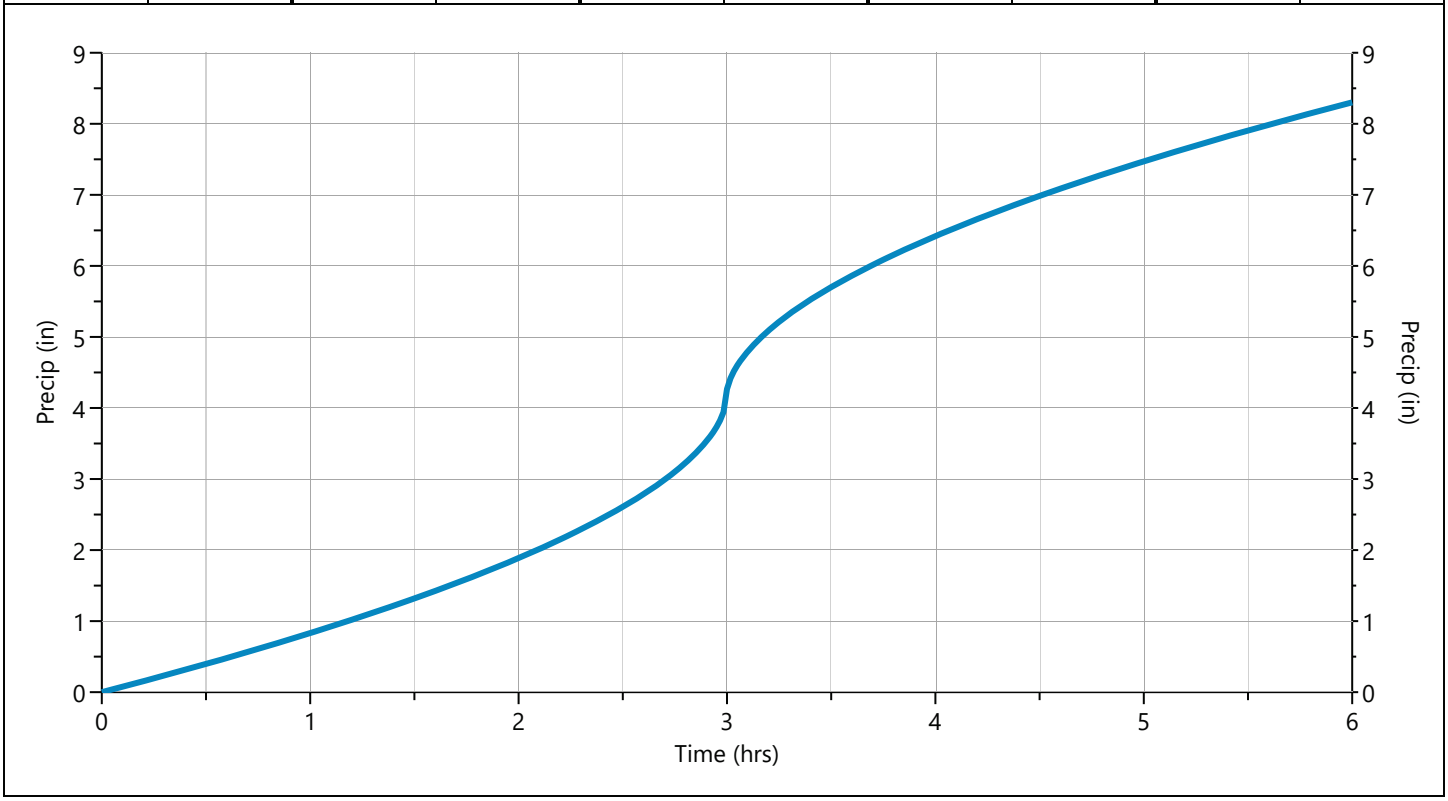
Hydrology Studio v 3.0.0.44

09-29-2026

Storm Distribution: IDF Based - Synthetic, 6-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	✔ 25-yr	50-yr	100-yr	
6 hrs	0	5.32	0	6.37	7.21	8.30	9.12	9.85	

Incremental Rainfall Distribution, 25-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
2.50	0.028301	2.68	0.034665	2.87	0.050706	3.05	0.083084	3.23	0.040316
2.52	0.028731	2.70	0.035505	2.88	0.053735	3.07	0.072259	3.25	0.039066
2.53	0.029183	2.72	0.036415	2.90	0.057438	3.08	0.064975	3.27	0.037932
2.55	0.029659	2.73	0.037404	2.92	0.062117	3.10	0.059630	3.28	0.036899
2.57	0.030161	2.75	0.038486	2.93	0.068305	3.12	0.055487	3.30	0.035951
2.58	0.030691	2.77	0.039675	2.95	0.077064	3.13	0.052150	3.32	0.035077
2.60	0.031253	2.78	0.040992	2.97	0.090954	3.15	0.049384	3.33	0.034269
2.62	0.031849	2.80	0.042462	2.98	0.118769	3.17	0.047043	3.35	0.033518
2.63	0.032484	2.82	0.044116	**3.00**	**0.323614**	3.18	0.045025	3.37	0.032817
2.65	0.033161	2.83	0.045998	3.02	0.150593	3.20	0.043263	3.38	0.032161
2.67	0.033886	2.85	0.048168	3.03	0.101903	3.22	0.041706	3.40	0.031547



Hydrograph 50-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	14.36	0.18	12,653	----		
2	Rational	Pre-Dev Basin "B"	48.29	0.25	58,019	----		
3	Rational	Pre-Dev Basin "C"	27.23	0.18	23,992	----		
4	Rational	Pre-Dev Basin "D"	12.31	0.13	7,889	----		
5	Rational	Pre-Dev Basin "E-1"	38.98	0.20	37,472	----		
6	Rational	Pre-Dev Basin "E-2"	66.22	0.22	68,955	----		
7	Junction	Total Pre Basin "E"	103.3	0.22	104,970	5, 6		
8	Rational	Pre-Dev Basin "F"	41.64	0.28	56,705	----		
9	Rational	Post-Dev Basin A	13.64	0.25	16,384	----		
10	Rational	Post-Dev Basin B	37.35	0.35	62,823	----		
11	Rational	Post-Dev Basin "C"	27.85	0.18	24,537	----		
12	Rational	Post-Dev Basin "D"	12.11	0.13	7,757	----		
13	Rational	Post-Dev Basin "E-1"	67.82	0.43	141,251	----		
14	Pond Route	Detention Basin	33.90	0.80	140,375	13	471.63	64,167
15	Rational	Post-Dev Basin "E-2"	59.65	0.22	62,118	----		
16	Junction	Total Post-Dev "E"	66.71	0.22	201,222	14, 15		
17	Rational	Post-Dev Basin "F"	39.79	0.27	51,000	----		

Hydrograph Report

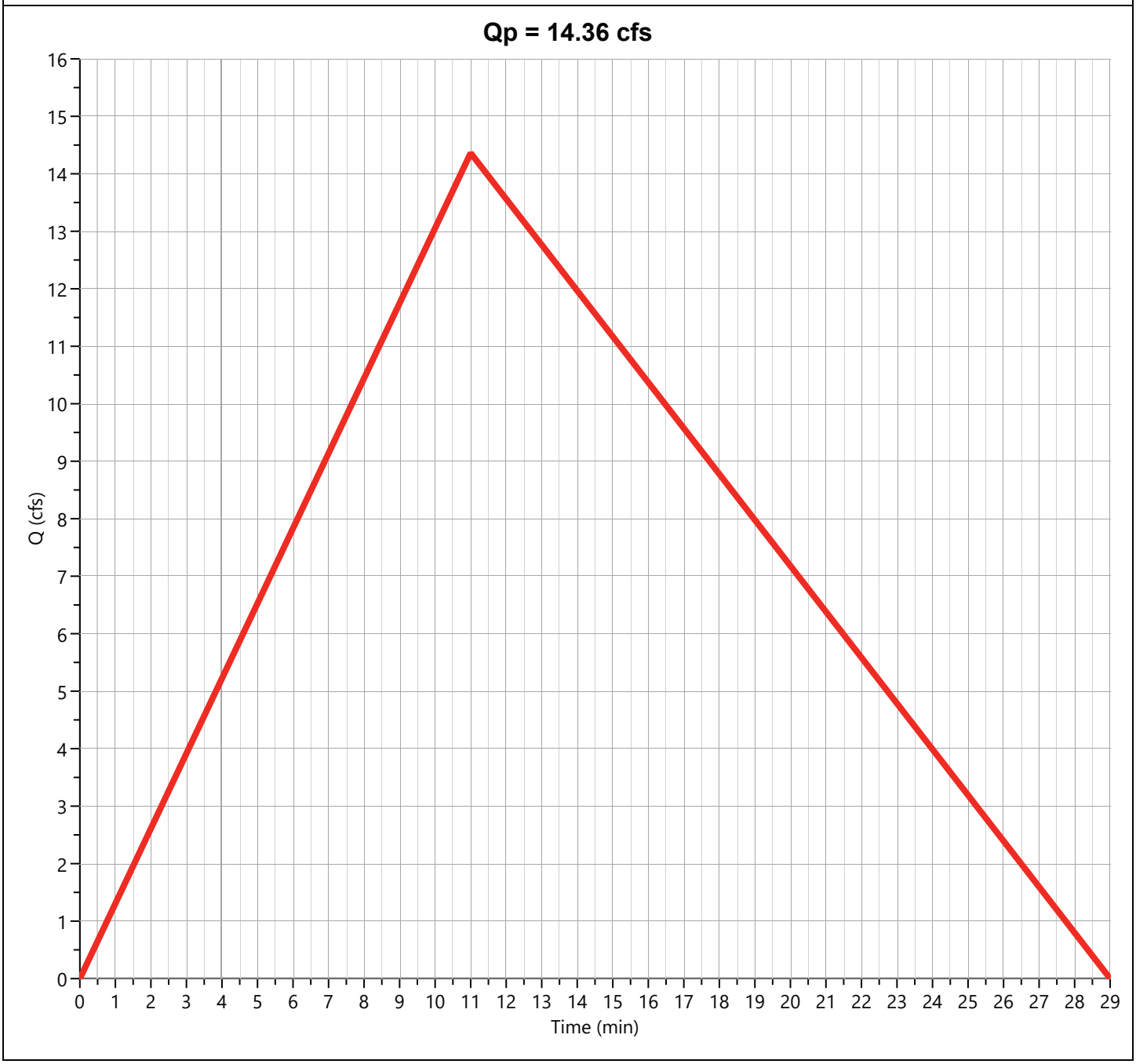
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 14.36 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 12,653 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

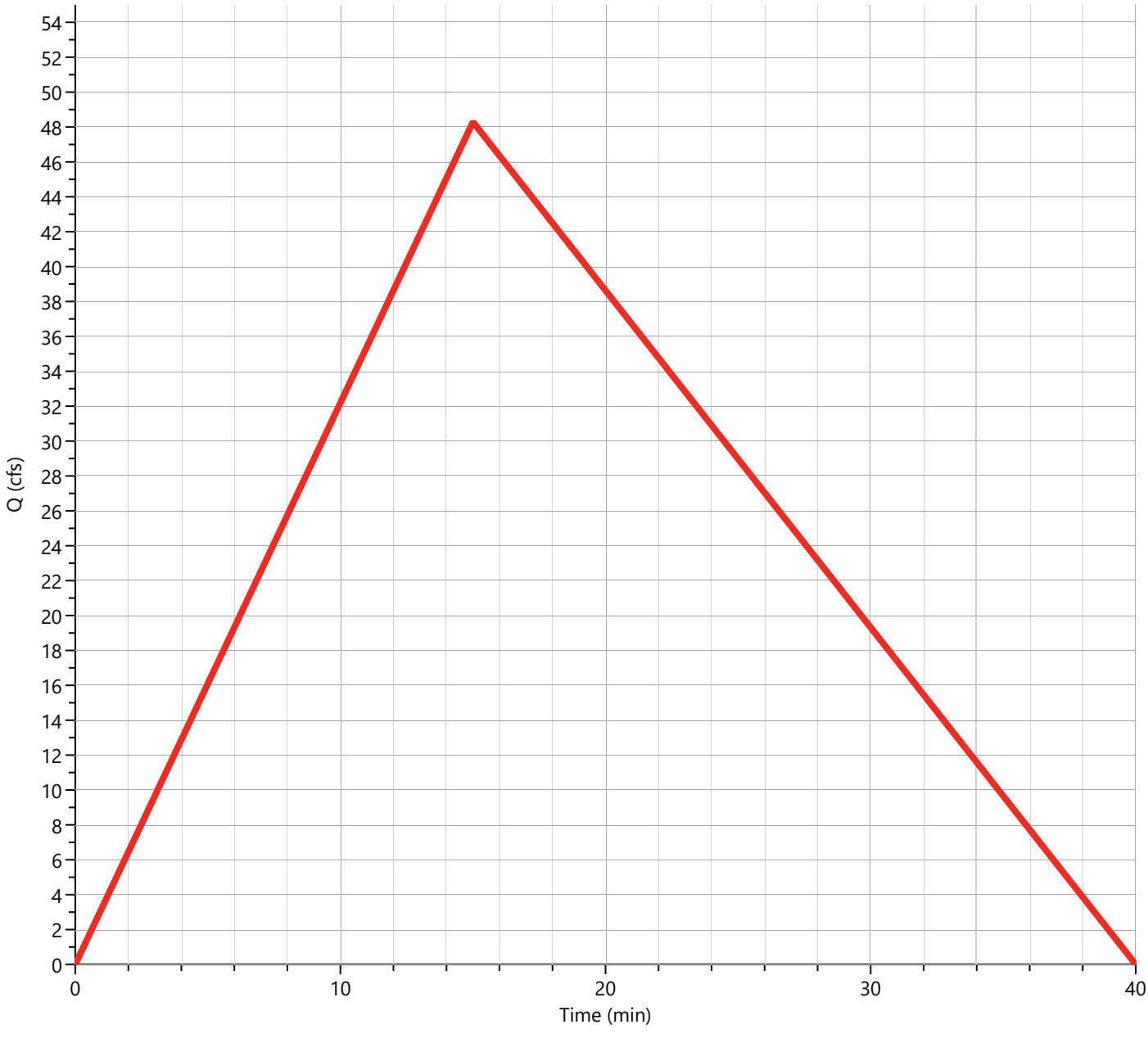
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 48.29 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 58,019 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

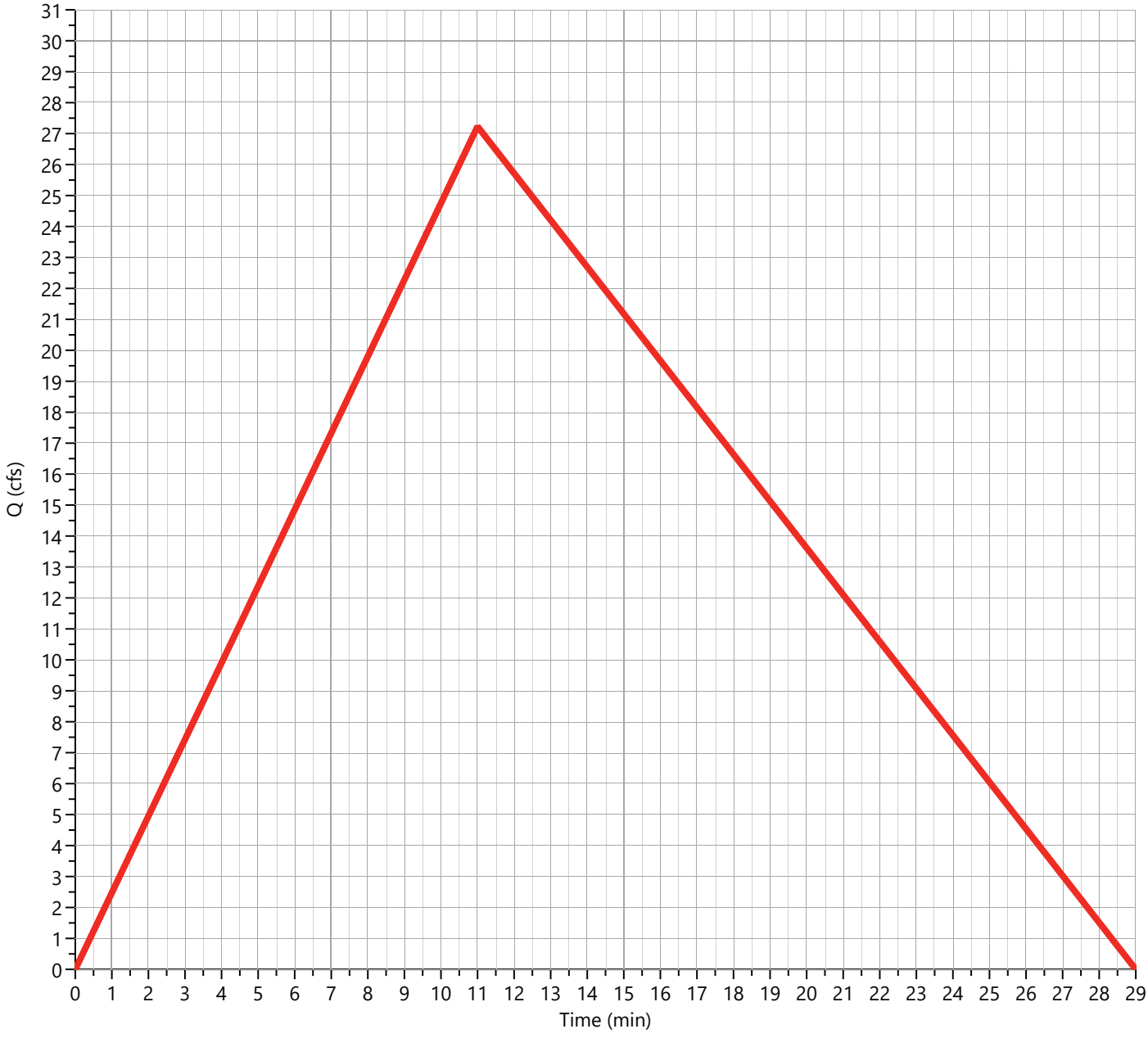
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 27.23 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 23,992 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

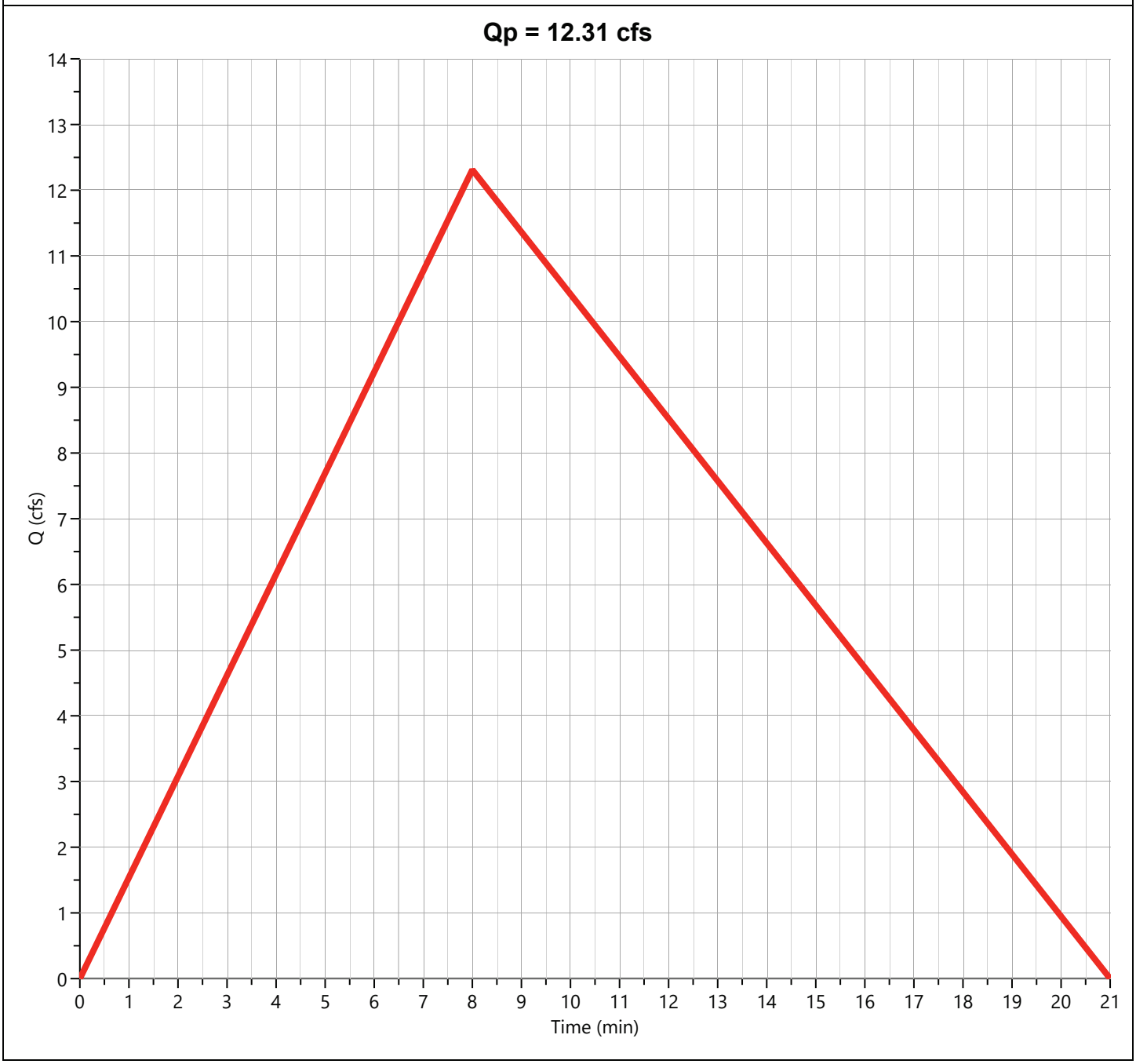
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 12.31 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,889 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.35 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

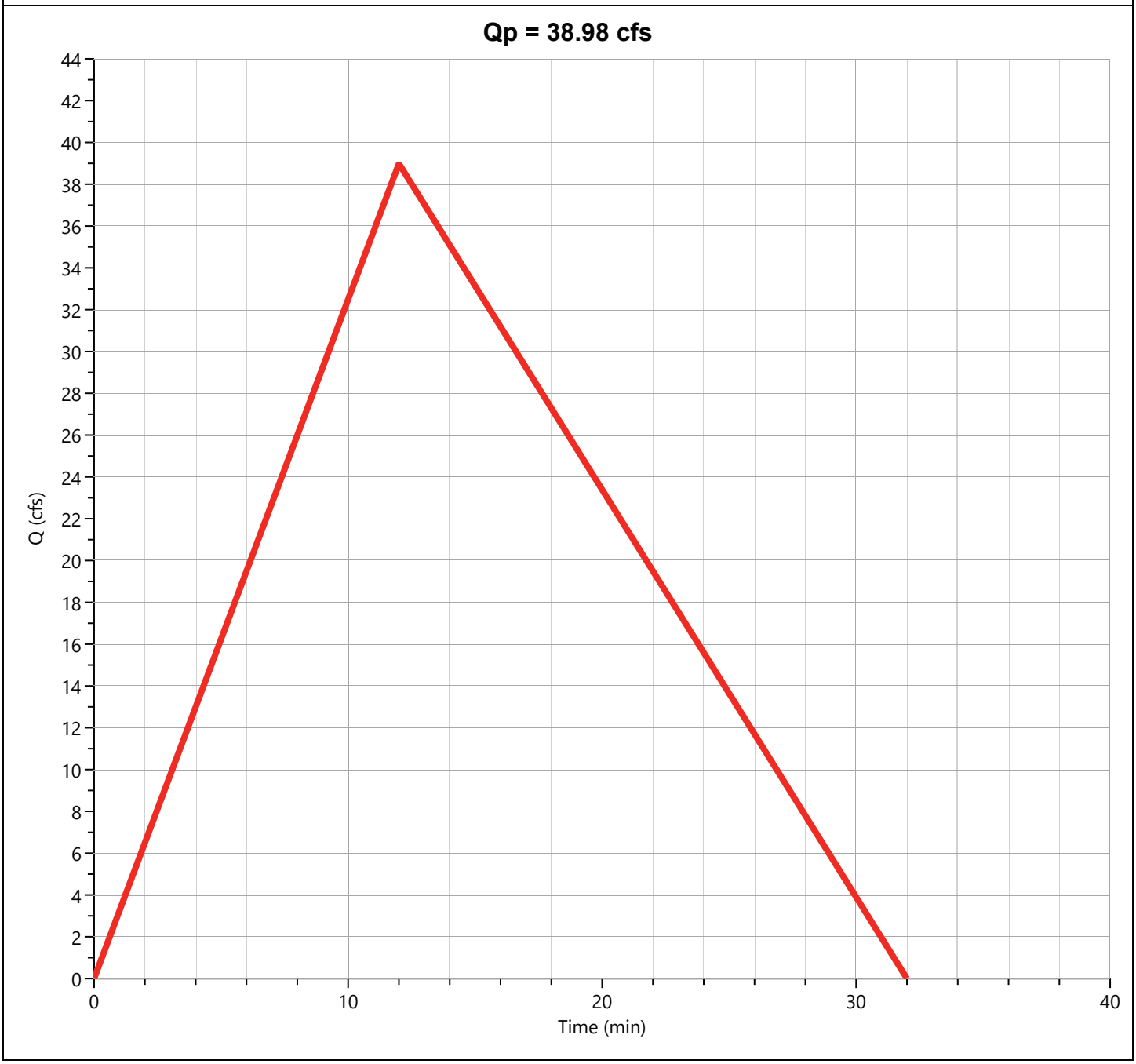
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 38.98 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 37,472 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

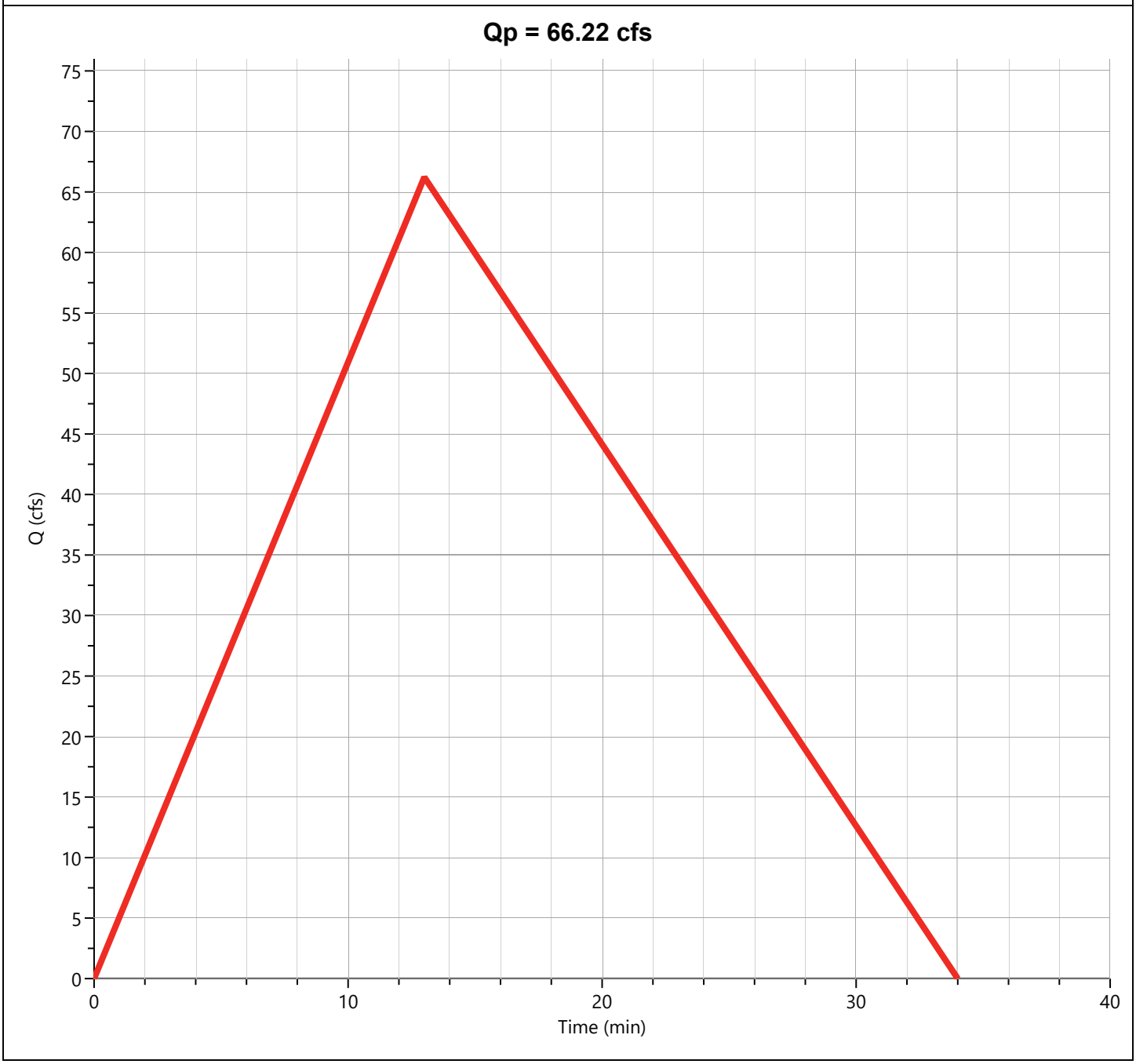
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 66.22 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 68,955 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.72 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

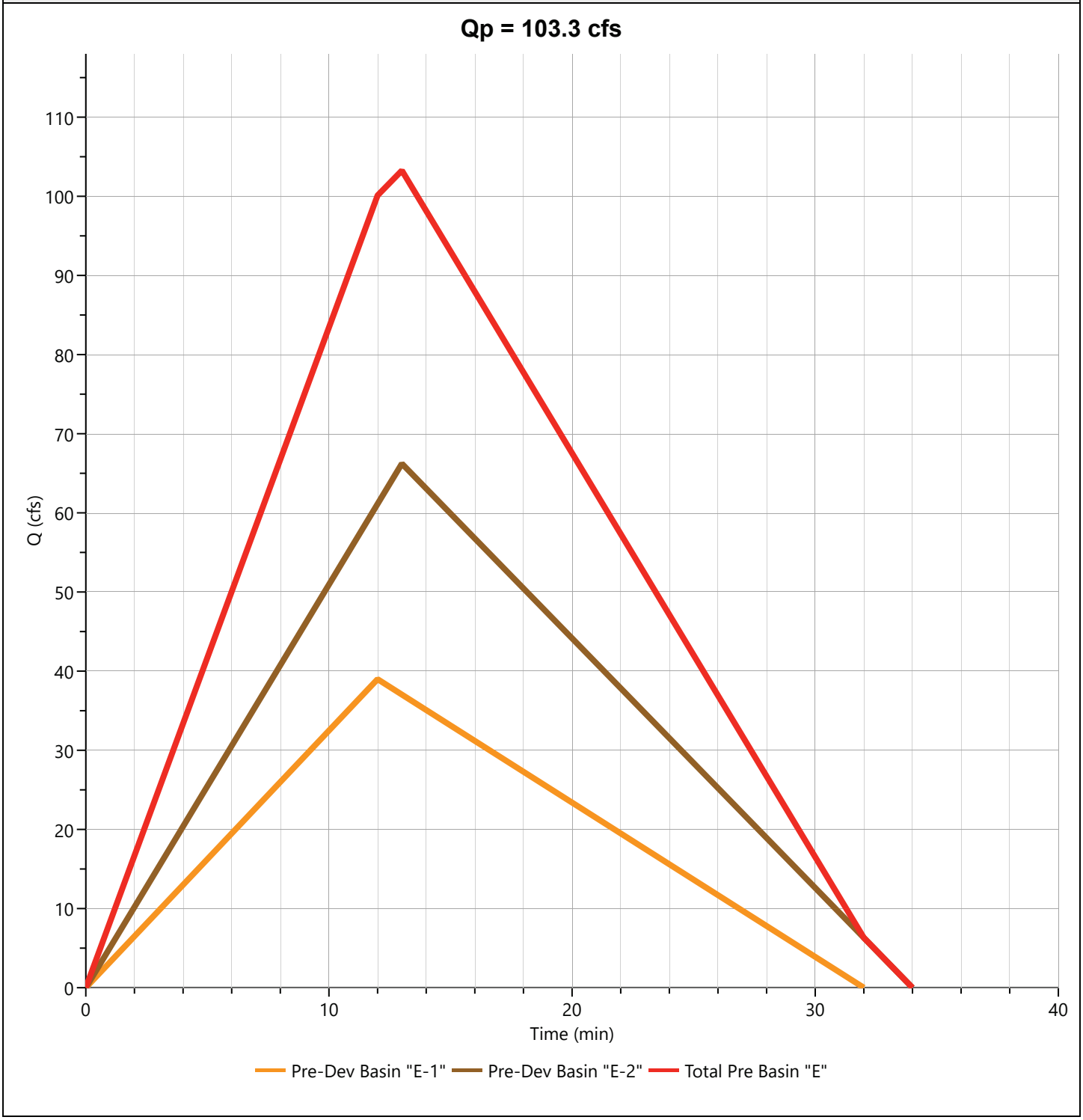
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Pre Basin "E"

Hyd. No. 7

Hydrograph Type	= Junction	Peak Flow	= 103.3 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 104,970 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Hydrograph Report

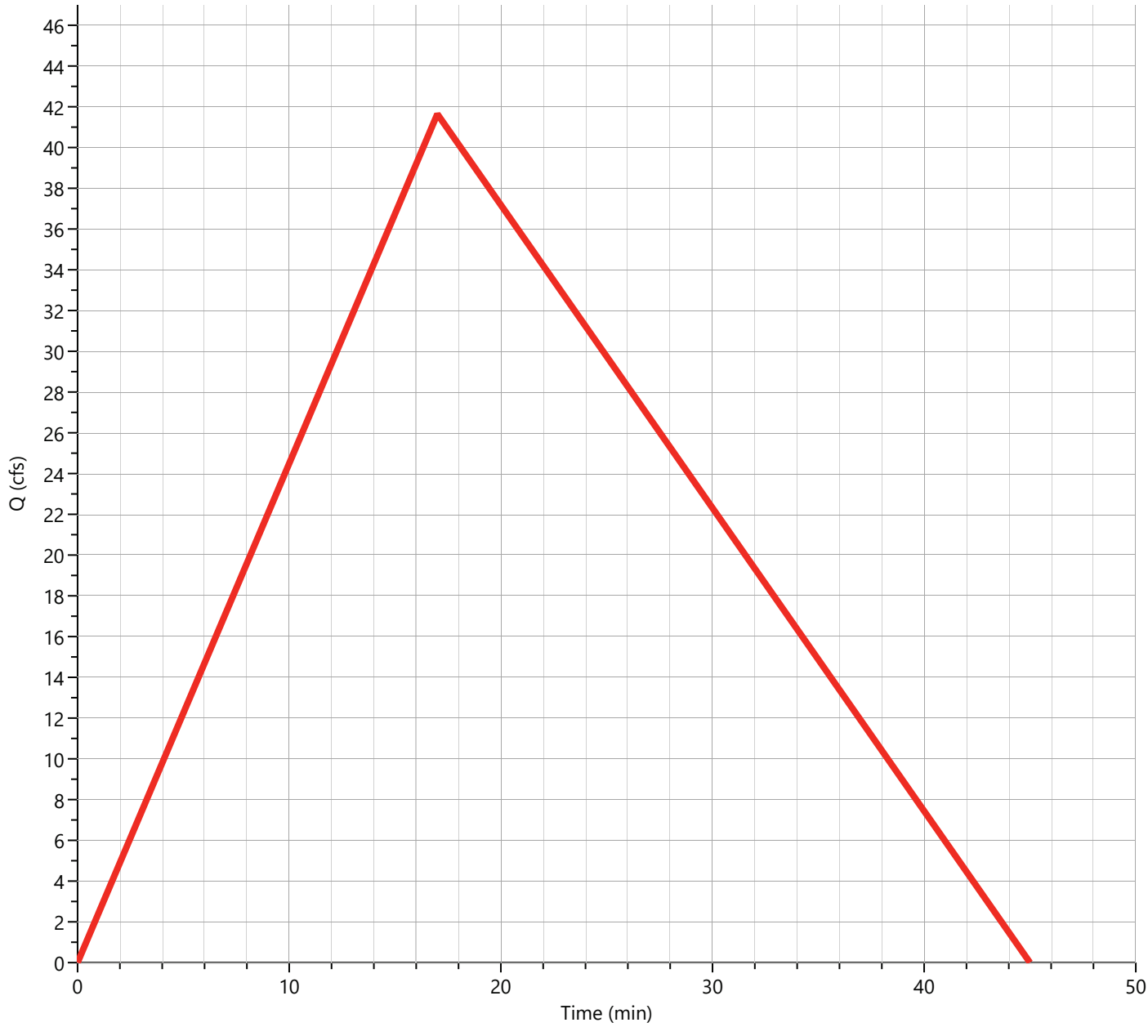
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 41.64 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 56,705 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

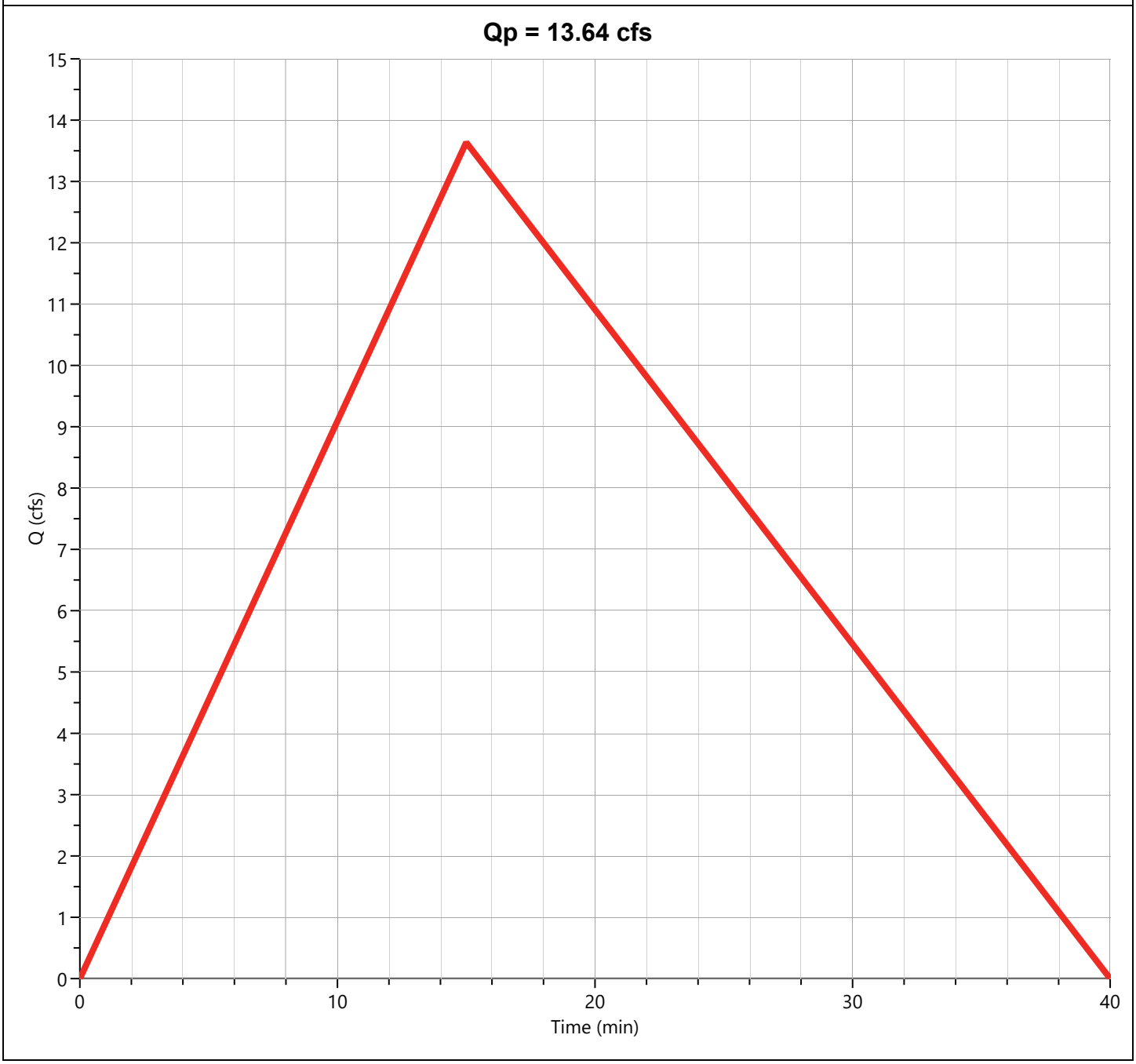
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 13.64 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 16,384 cuft
Drainage Area	= 3.33 ac	Runoff Coeff.	= 0.65
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

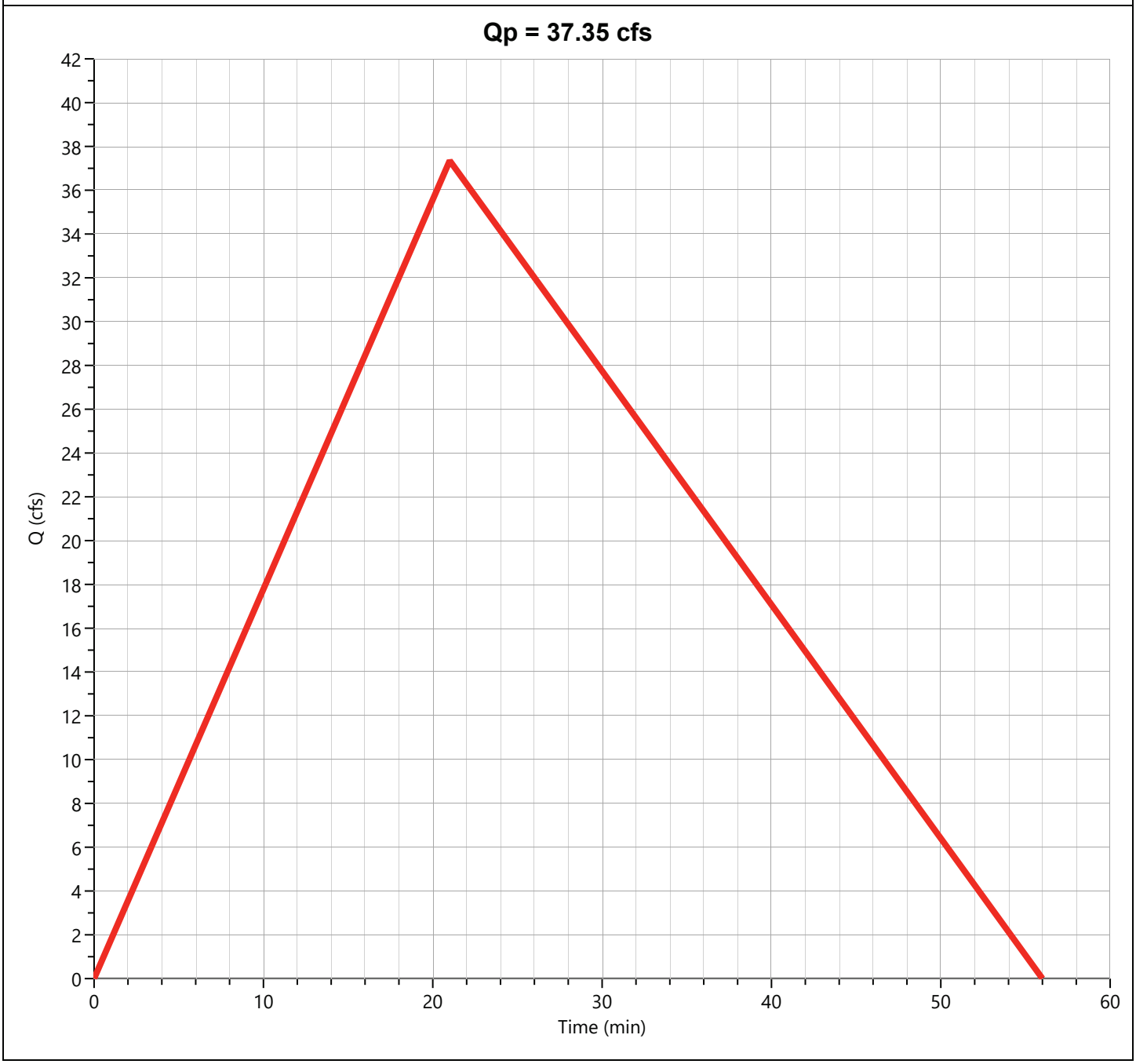
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 37.35 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Runoff Volume	= 62,823 cuft
Drainage Area	= 12.53 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 21.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.42 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 27.85 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 24,537 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

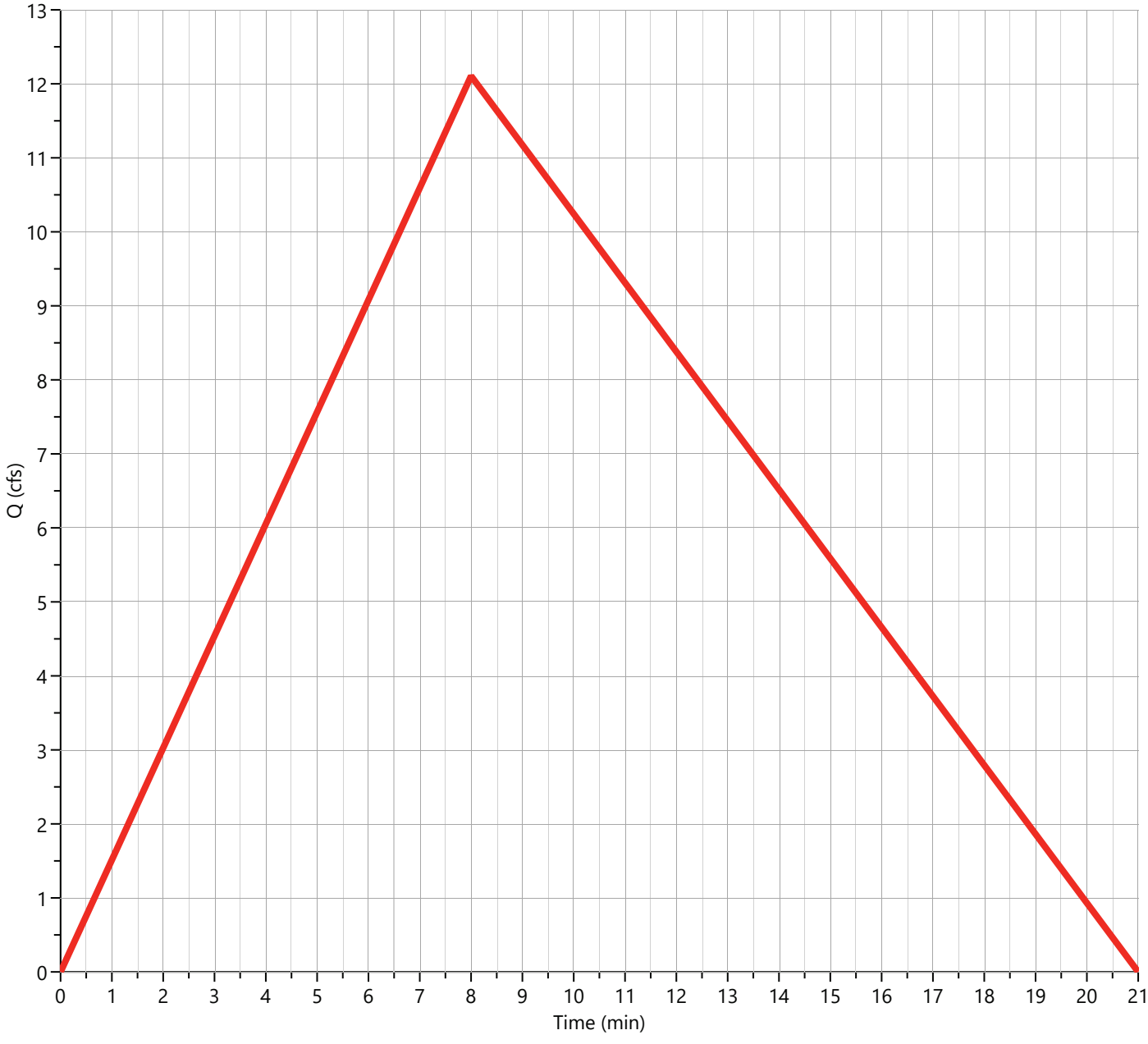
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 12.11 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,757 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.35 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

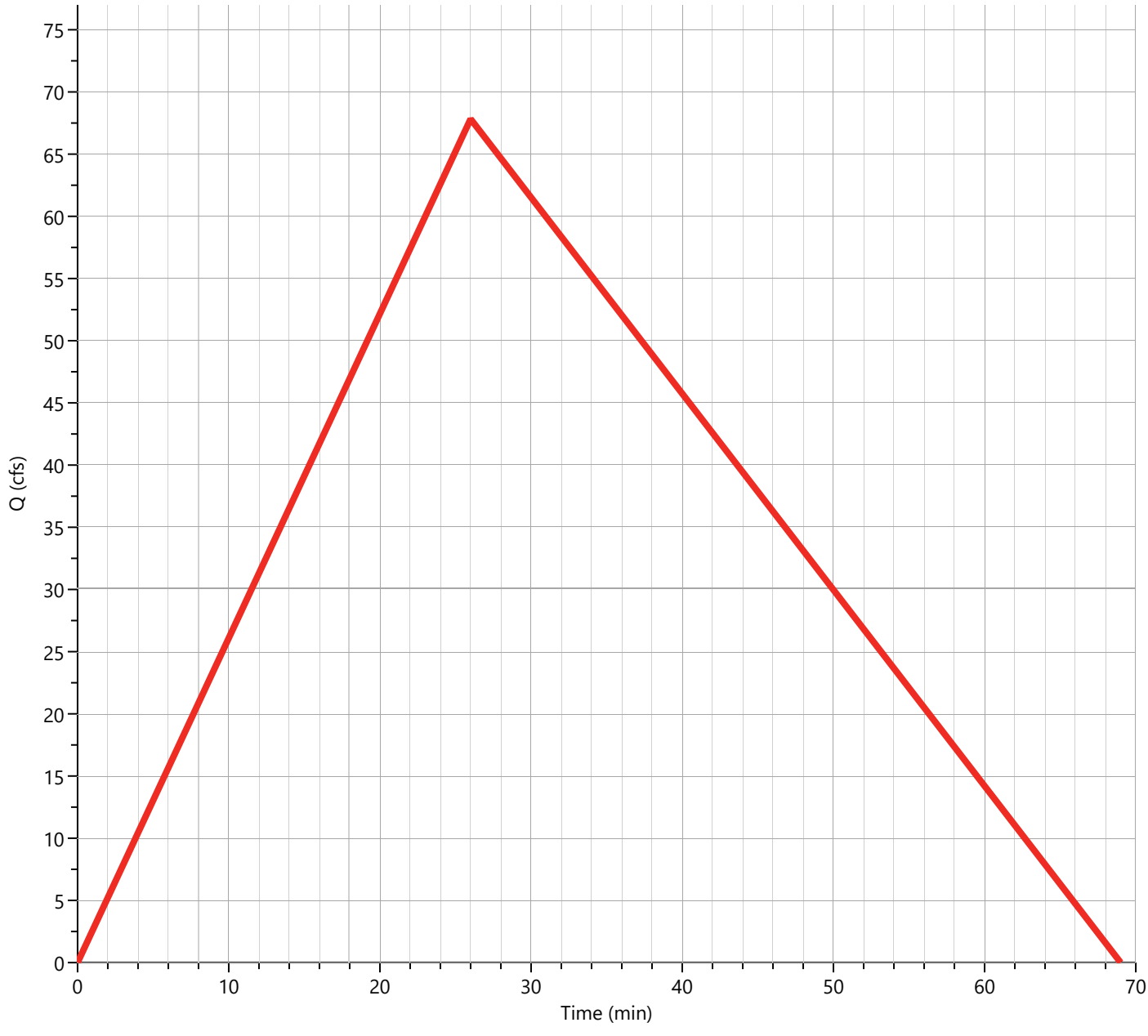
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 67.82 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.43 hrs
Time Interval	= 1 min	Runoff Volume	= 141,251 cuft
Drainage Area	= 18.36 ac	Runoff Coeff.	= 0.75
Tc Method	= User	Time of Conc. (Tc)	= 26.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.93 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

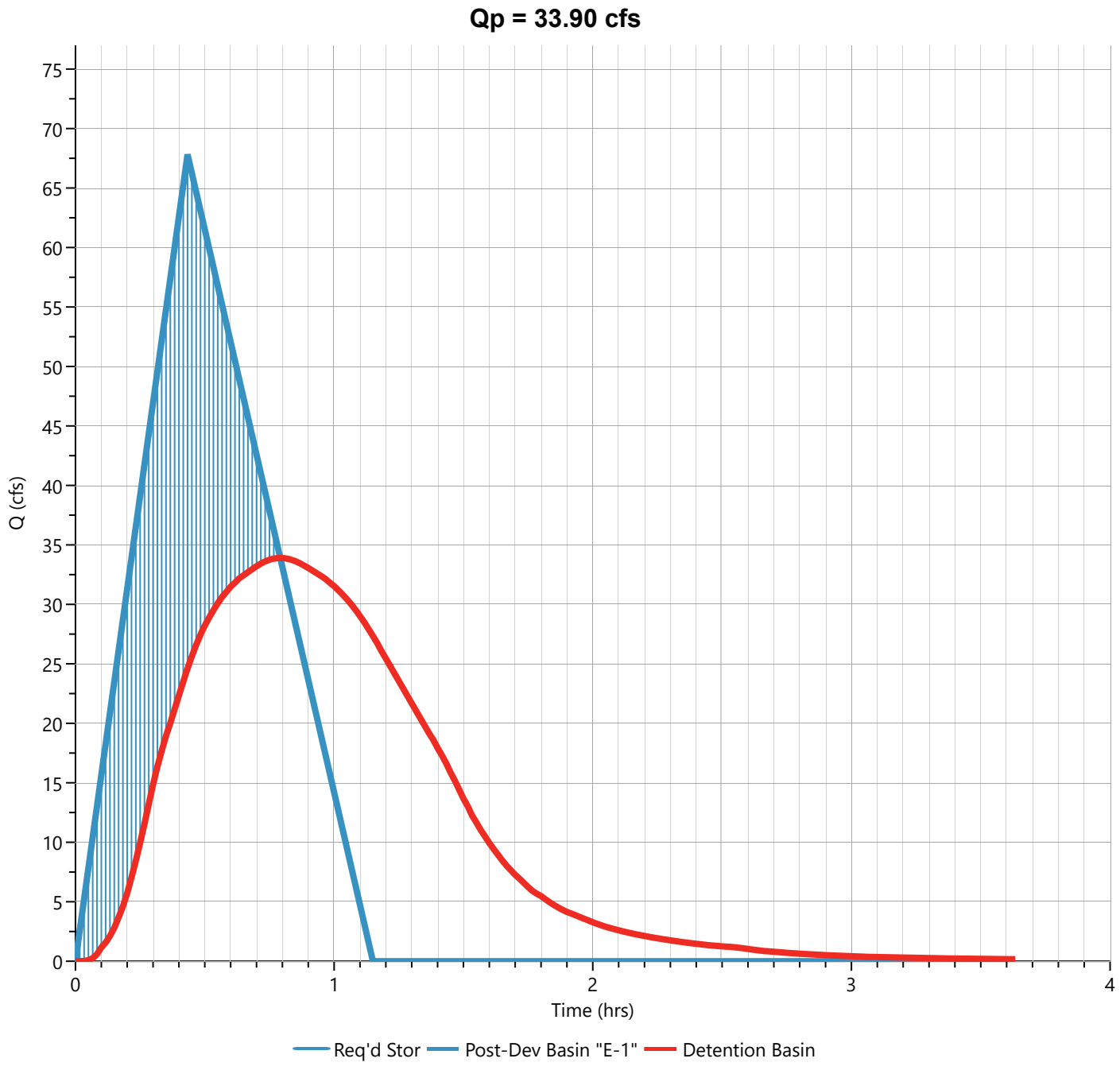
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 33.90 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.80 hrs
Time Interval	= 1 min	Hydrograph Volume	= 140,375 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 471.63 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 64,167 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 27 min



Hydrograph Report

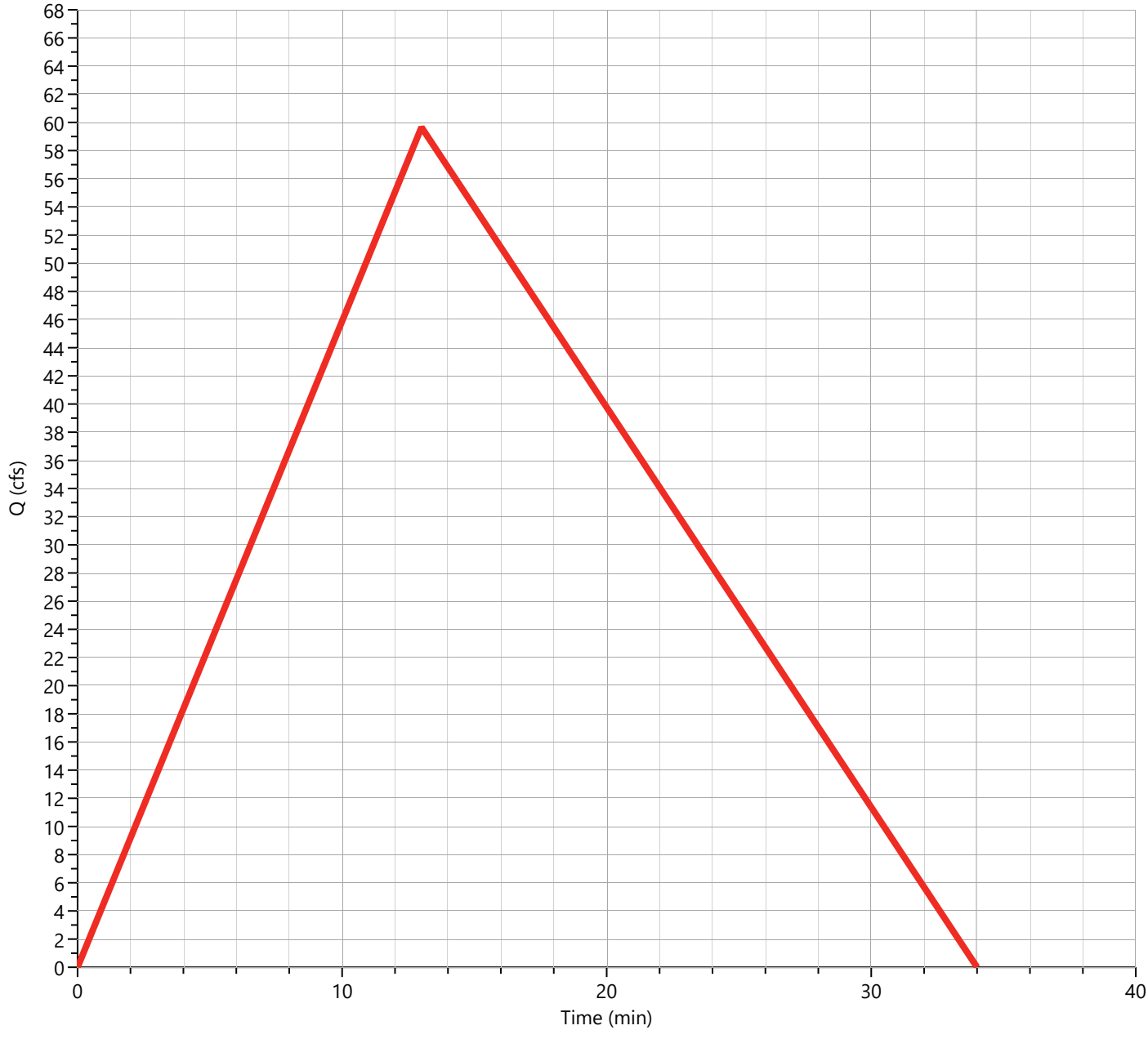
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 59.65 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 62,118 cuft
Drainage Area	= 15.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.72 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

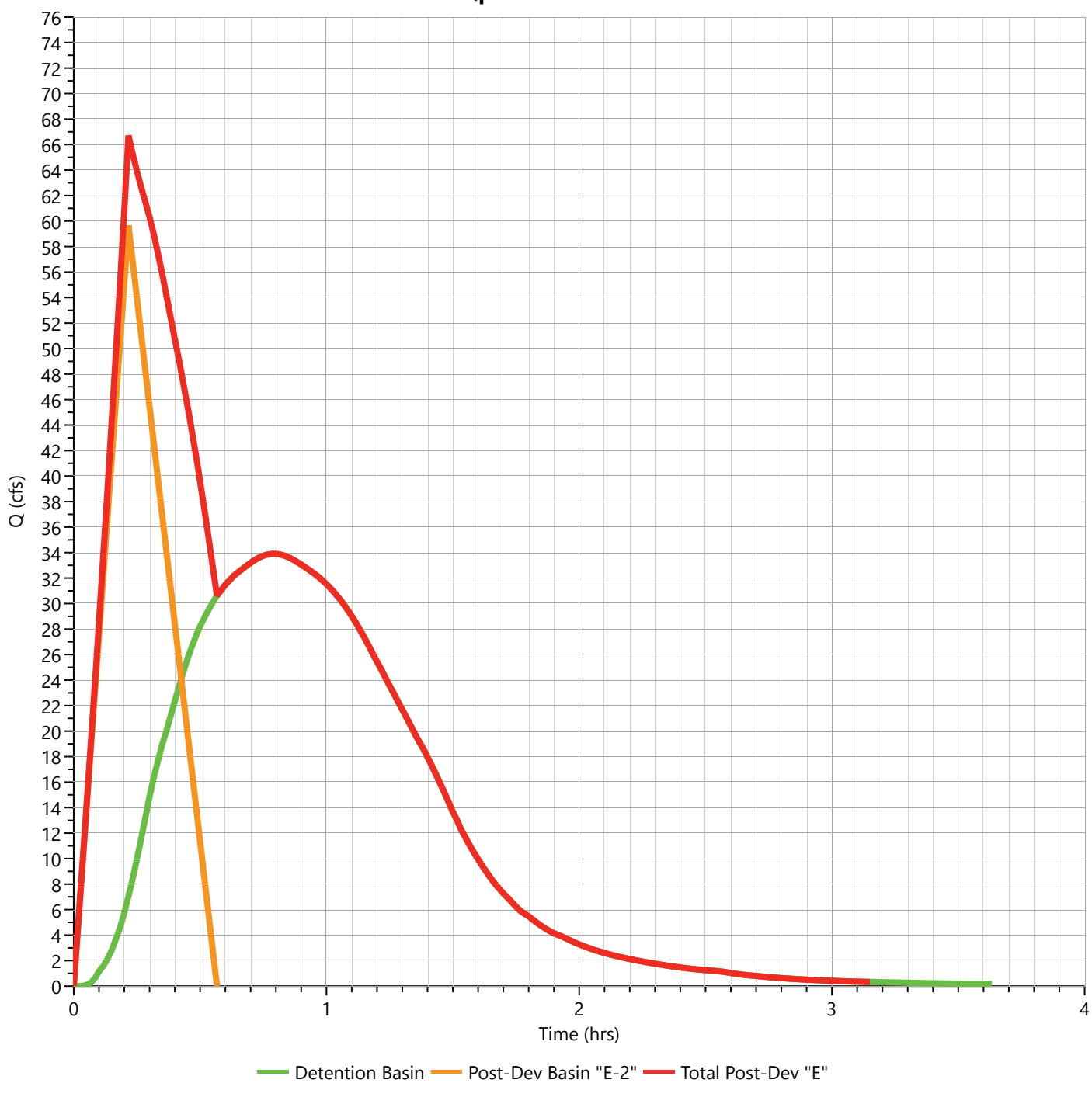
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Post-Dev "E"

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 66.71 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 201,222 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 15.86 ac



Hydrograph Report

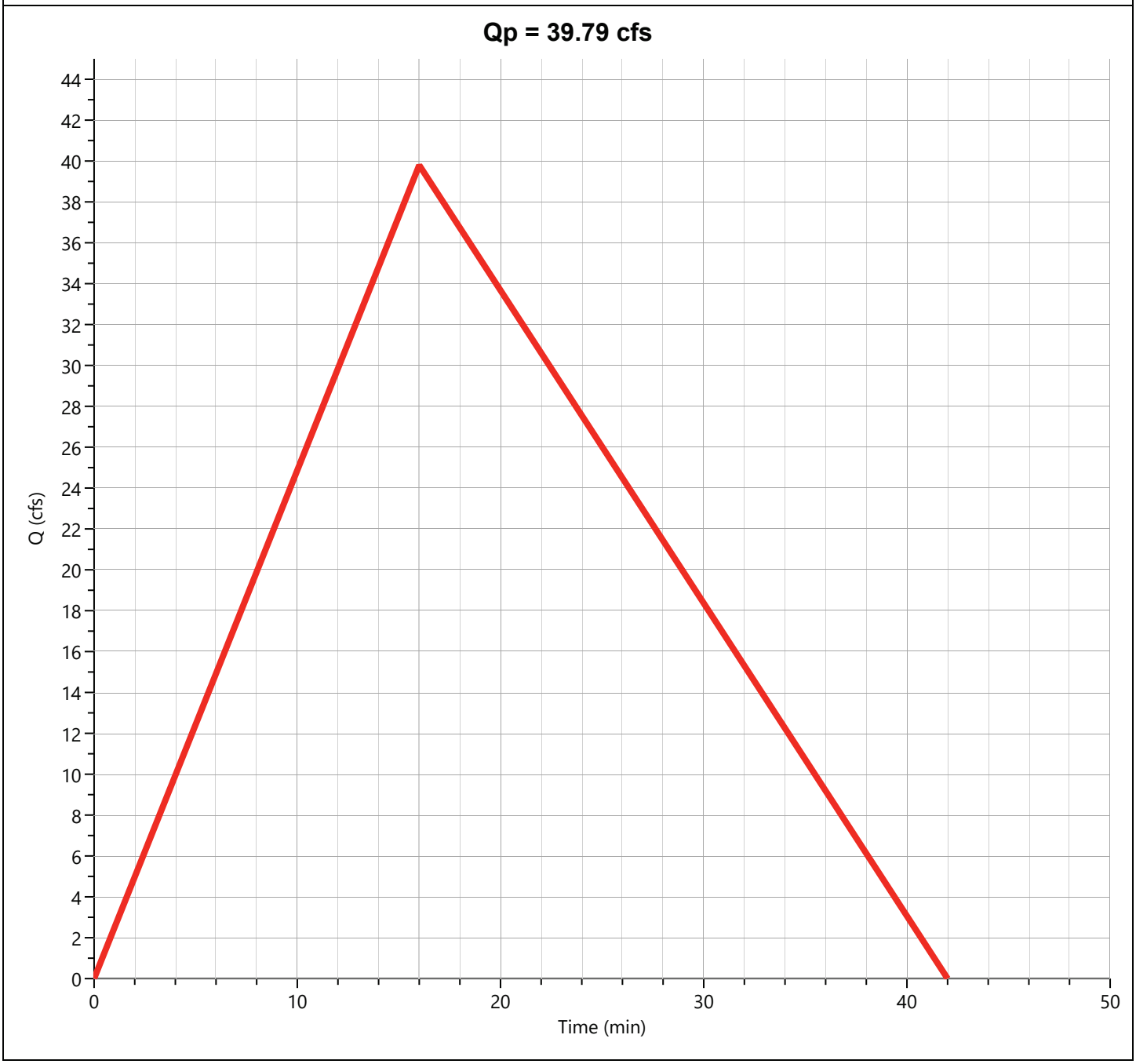
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 39.79 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 51,000 cuft
Drainage Area	= 11.61 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.12 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Design Storm Report

Custom Storm filename:

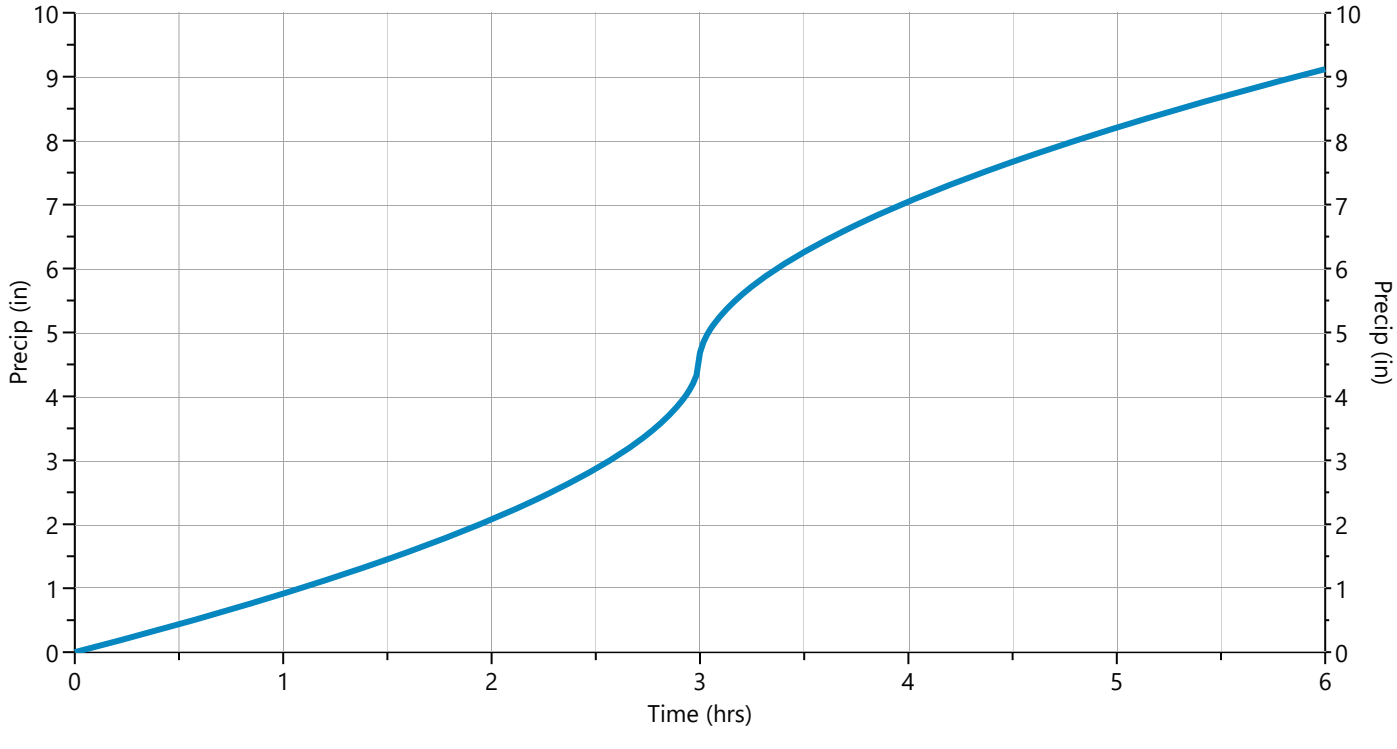
Hydrology Studio v 3.0.0.44

09-29-2026

Storm Distribution: IDF Based - Synthetic, 6-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	✔ 50-yr	100-yr	
6 hrs	0	5.32	0	6.37	7.21	8.30	9.12	9.85	

Incremental Rainfall Distribution, 50-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
2.50	0.031084	2.68	0.038052	2.87	0.055600	3.05	0.090973	3.23	0.044236
2.52	0.031555	2.70	0.038971	2.88	0.058911	3.07	0.079152	3.25	0.042868
2.53	0.032050	2.72	0.039967	2.90	0.062959	3.08	0.071194	3.27	0.041628
2.55	0.032572	2.73	0.041049	2.92	0.068072	3.10	0.065354	3.28	0.040496
2.57	0.033121	2.75	0.042233	2.93	0.074833	3.12	0.060826	3.30	0.039459
2.58	0.033702	2.77	0.043534	2.95	0.084399	3.13	0.057178	3.32	0.038503
2.60	0.034317	2.78	0.044976	2.97	0.099564	3.15	0.054154	3.33	0.037618
2.62	0.034970	2.80	0.046583	2.98	0.129912	3.17	0.051594	3.35	0.036796
2.63	0.035664	2.82	0.048393	**3.00**	**0.352737**	3.18	0.049387	3.37	0.036029
2.65	0.036406	2.83	0.050452	3.02	0.164608	3.20	0.047460	3.38	0.035311
2.67	0.037200	2.85	0.052824	3.03	0.111512	3.22	0.045756	3.40	0.034638



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	15.60	0.18	13,742	----		
2	Rational	Pre-Dev Basin "B"	52.42	0.25	62,983	----		
3	Rational	Pre-Dev Basin "C"	29.57	0.18	26,057	----		
4	Rational	Pre-Dev Basin "D"	13.38	0.13	8,572	----		
5	Rational	Pre-Dev Basin "E-1"	42.33	0.20	40,692	----		
6	Rational	Pre-Dev Basin "E-2"	71.90	0.22	74,872	----		
7	Junction	Total Pre Basin "E"	112.1	0.22	113,981	5, 6		
8	Rational	Pre-Dev Basin "F"	45.20	0.28	61,545	----		
9	Rational	Post-Dev Basin A	14.80	0.25	17,786	----		
10	Rational	Post-Dev Basin B	40.52	0.35	68,164	----		
11	Rational	Post-Dev Basin "C"	30.24	0.18	26,649	----		
12	Rational	Post-Dev Basin "D"	13.15	0.13	8,429	----		
13	Rational	Post-Dev Basin "E-1"	73.57	0.43	153,208	----		
14	Pond Route	Detention Basin	37.69	0.78	152,260	13	471.98	69,992
15	Rational	Post-Dev Basin "E-2"	64.77	0.22	67,448	----		
16	Junction	Total Post-Dev "E"	72.60	0.22	218,328	14, 15		
17	Rational	Post-Dev Basin "F"	43.19	0.27	55,359	----		

Hydrograph Report

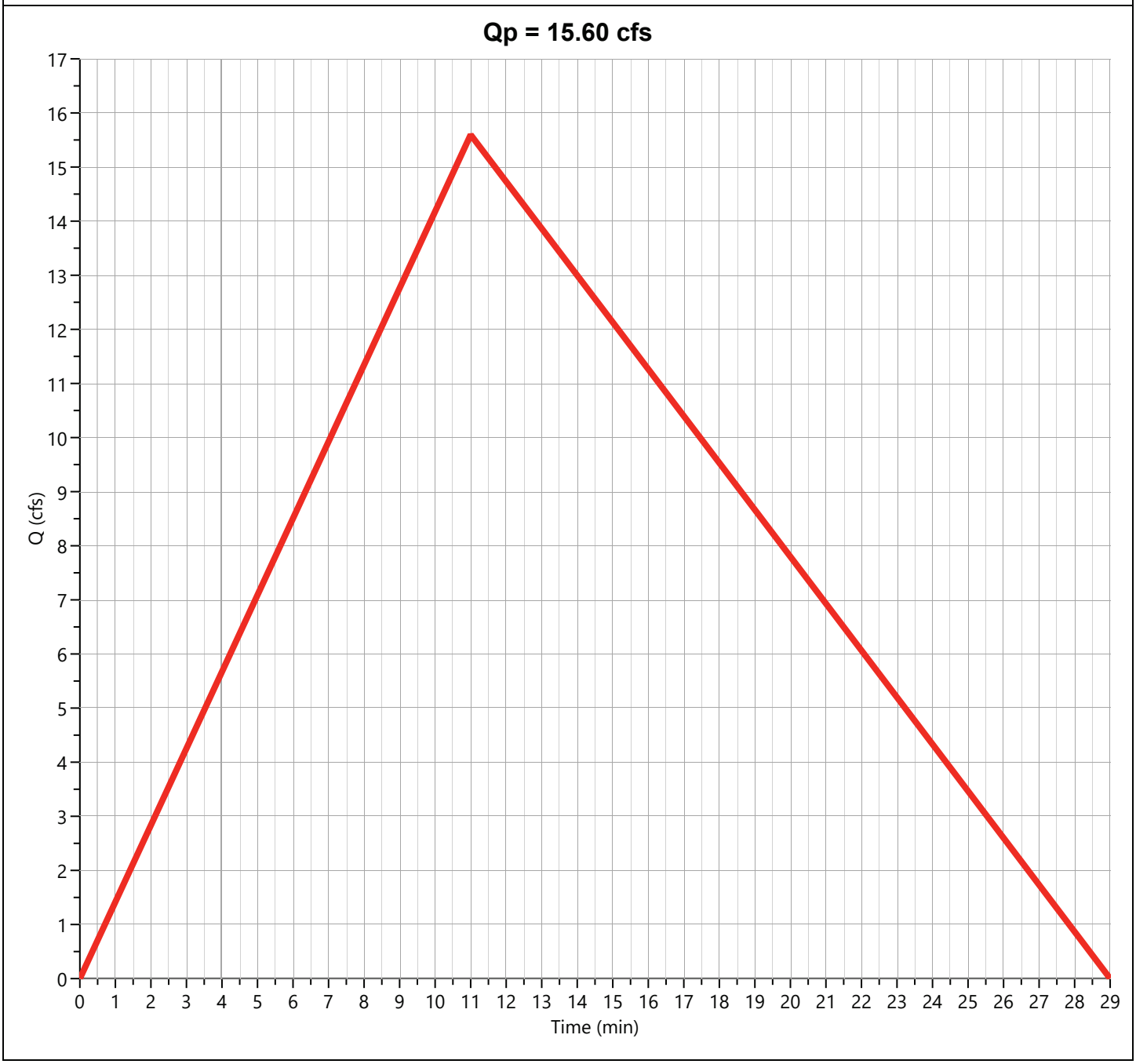
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 15.60 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 13,742 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

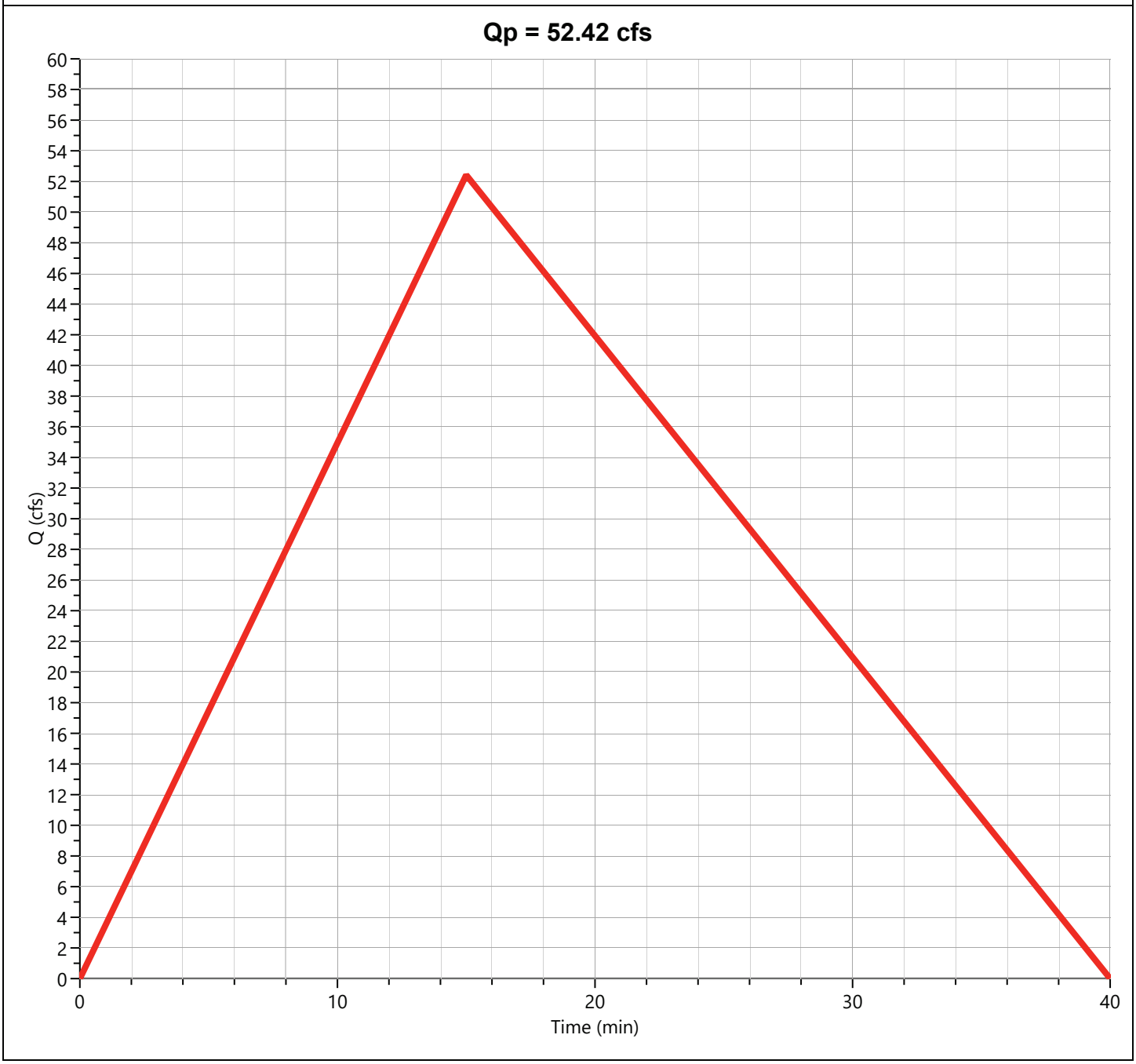
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 52.42 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 62,983 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.84 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 29.57 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 26,057 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

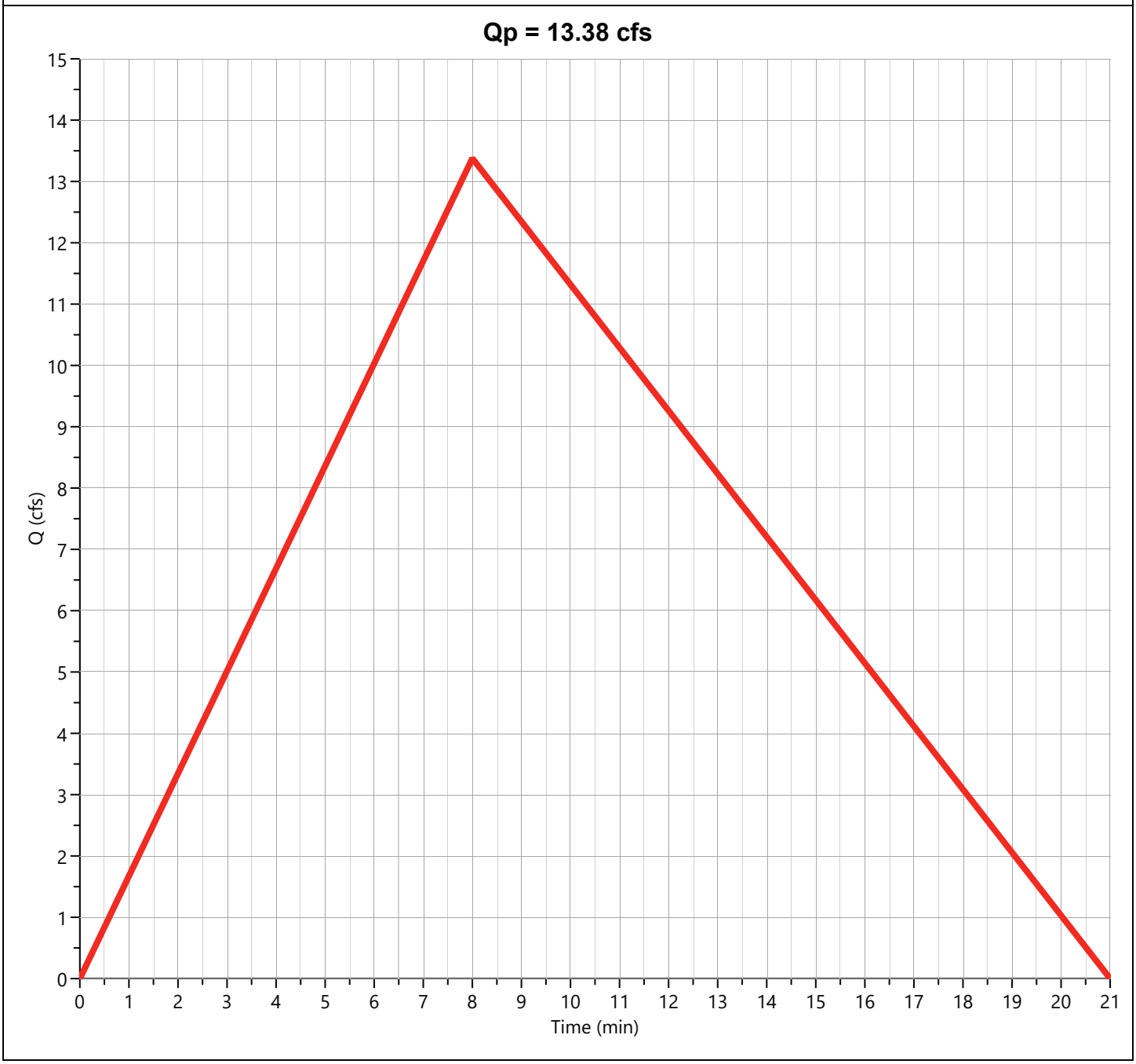
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 13.38 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 8,572 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.07 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

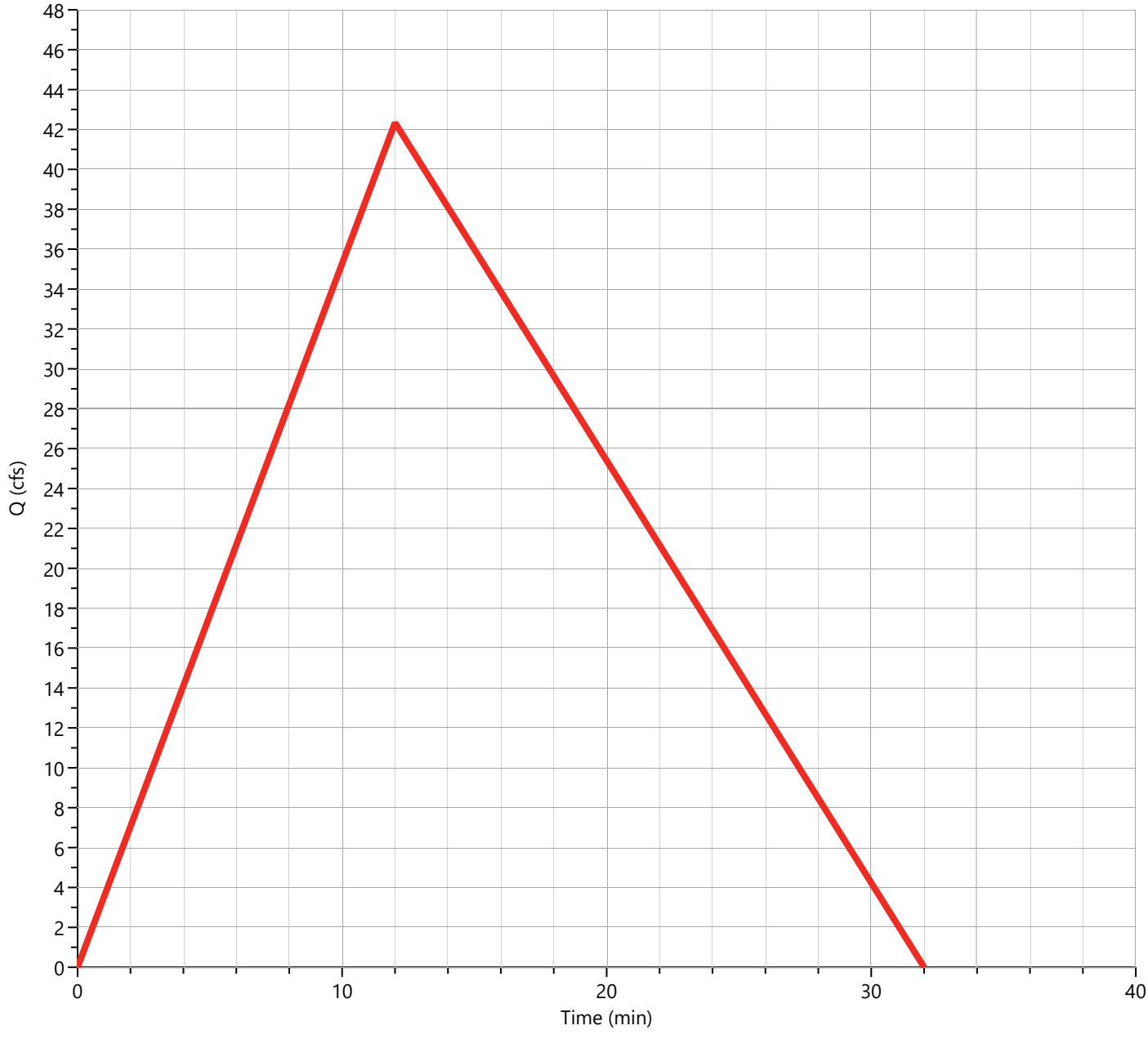
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 42.33 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 40,692 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.56 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

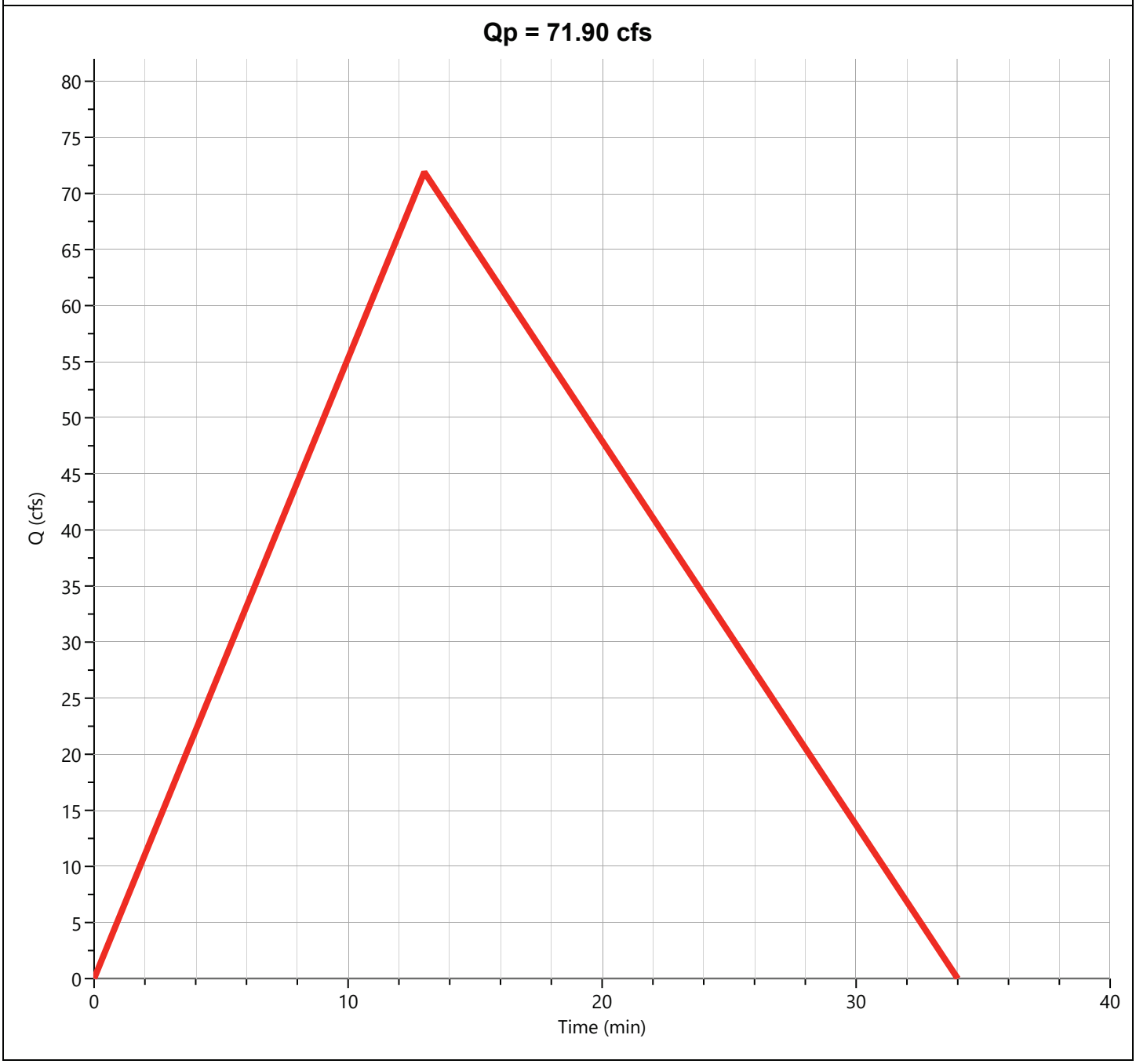
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 71.90 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 74,872 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.29 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

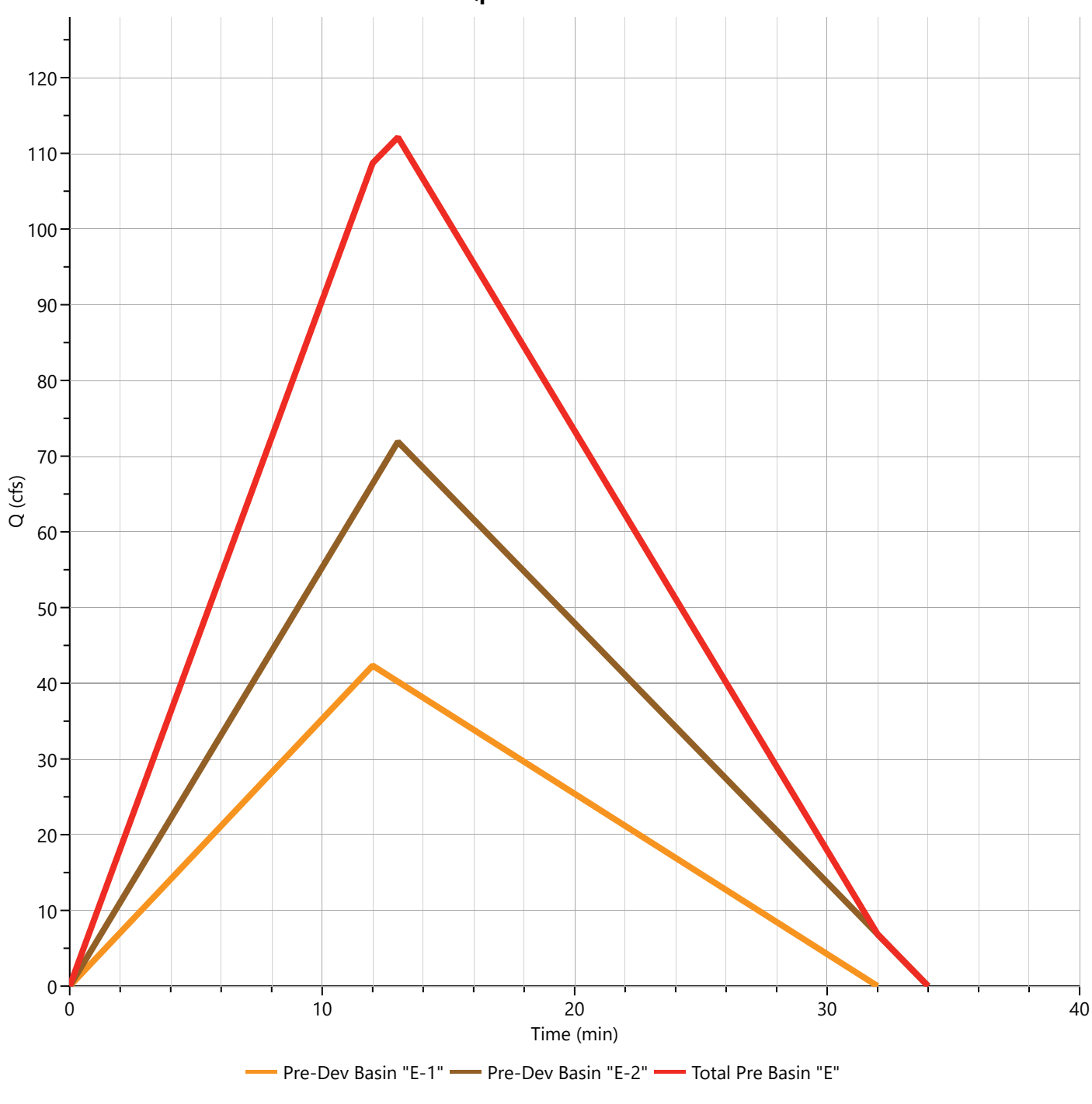
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Pre Basin "E"

Hyd. No. 7

Hydrograph Type	= Junction	Peak Flow	= 112.1 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 113,981 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Hydrograph Report

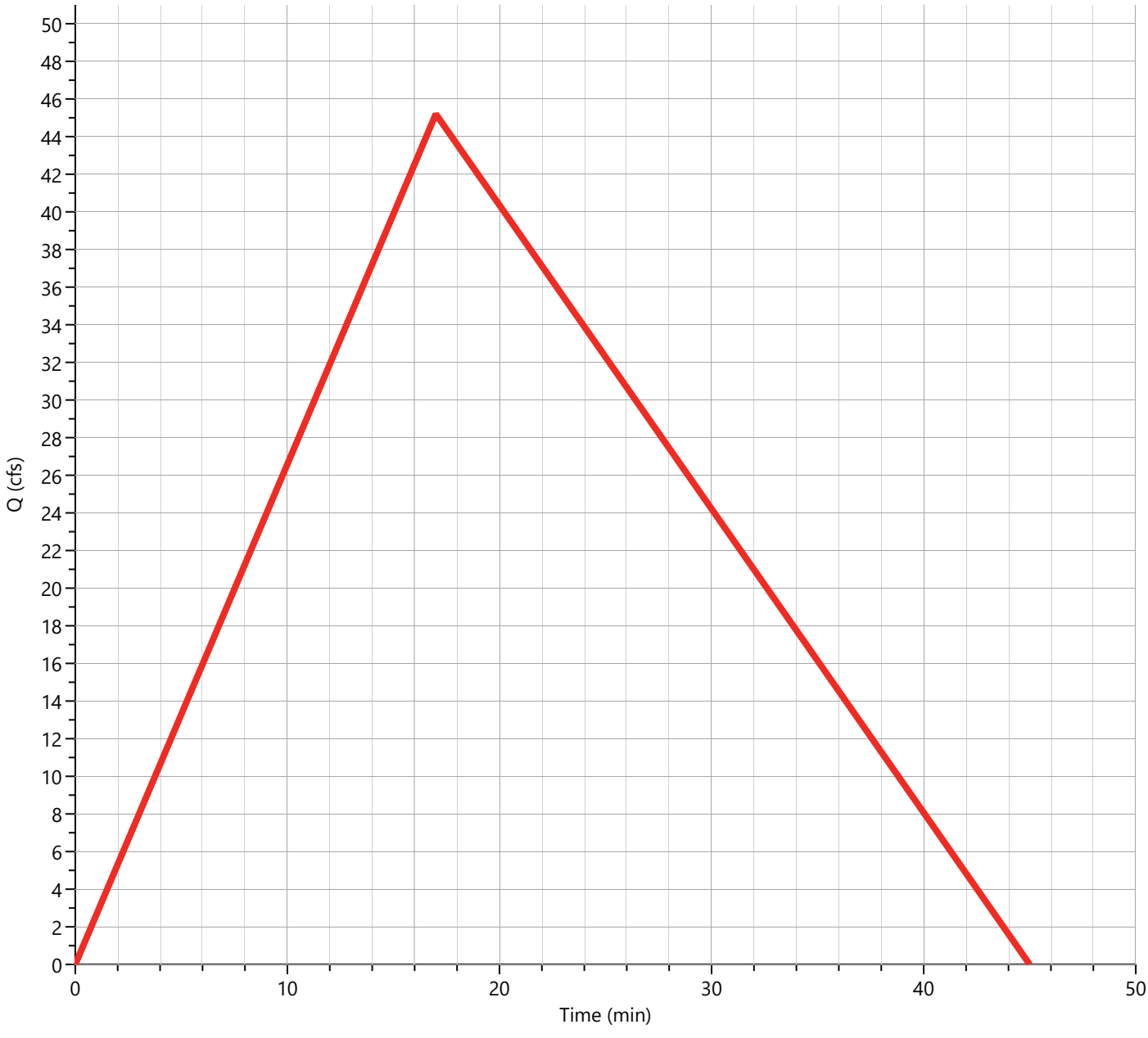
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 45.20 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 61,545 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.47 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

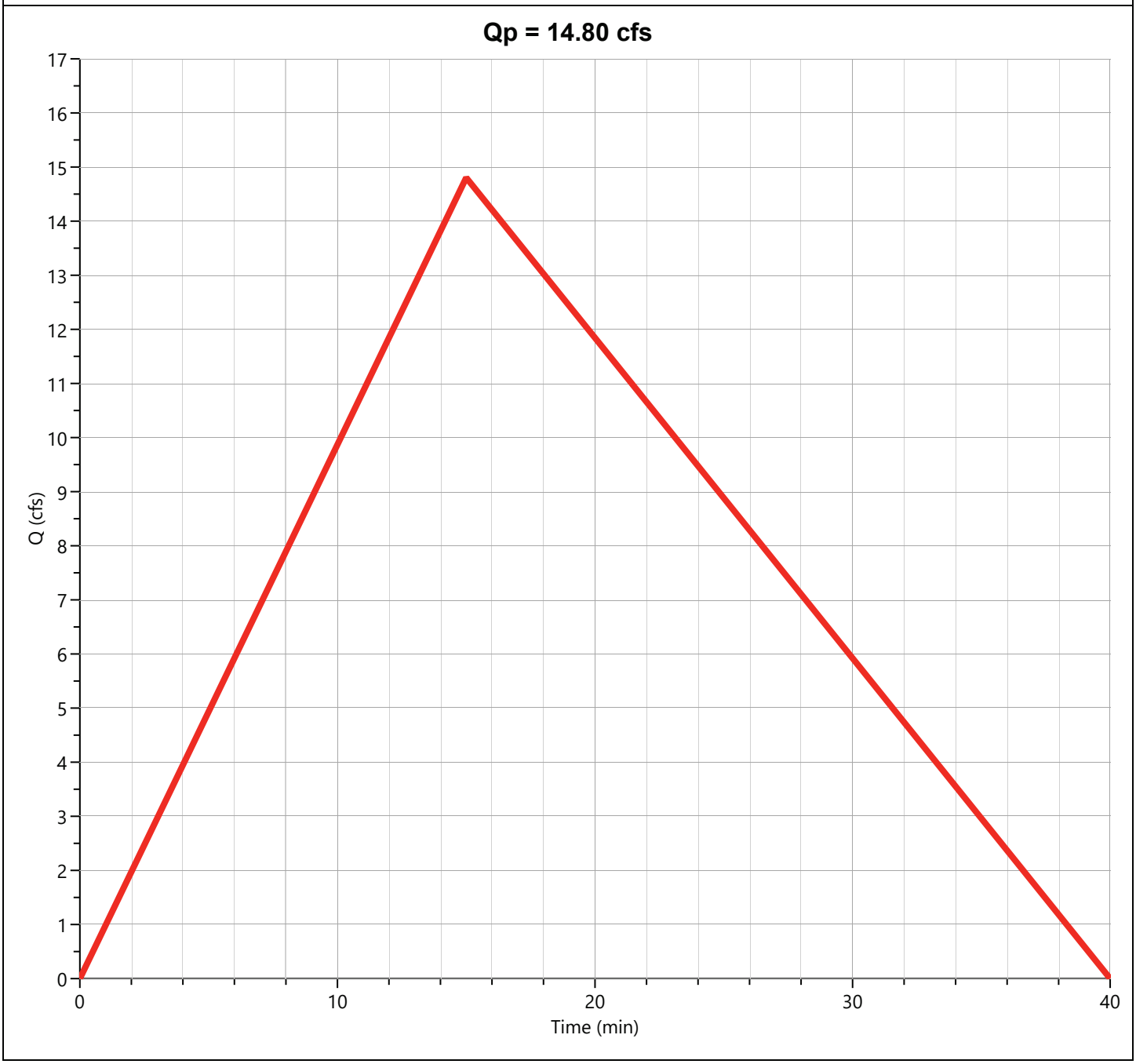
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 14.80 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 17,786 cuft
Drainage Area	= 3.33 ac	Runoff Coeff.	= 0.65
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.84 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

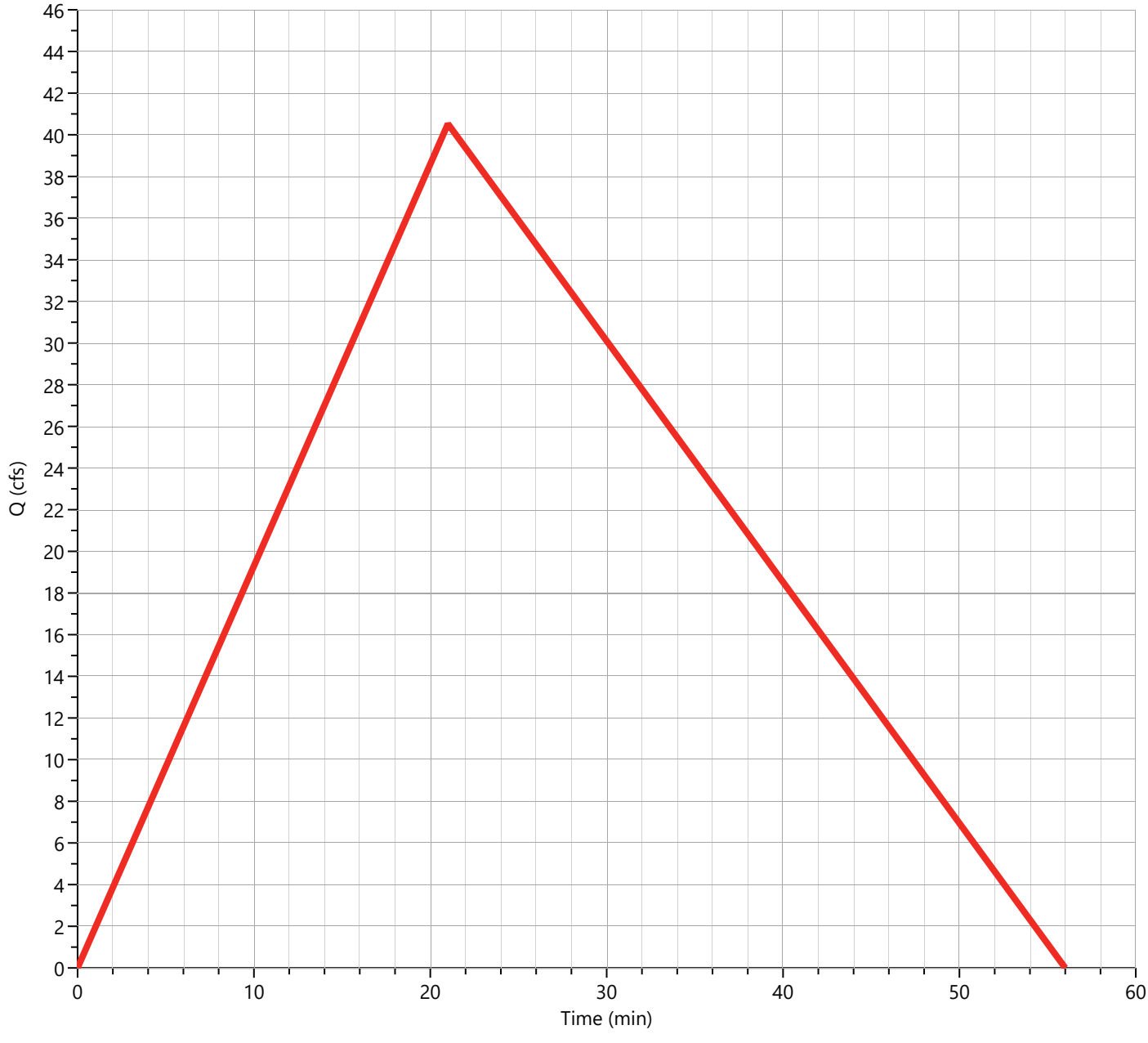
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 40.52 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Runoff Volume	= 68,164 cuft
Drainage Area	= 12.53 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 21.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.88 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 30.24 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 26,649 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

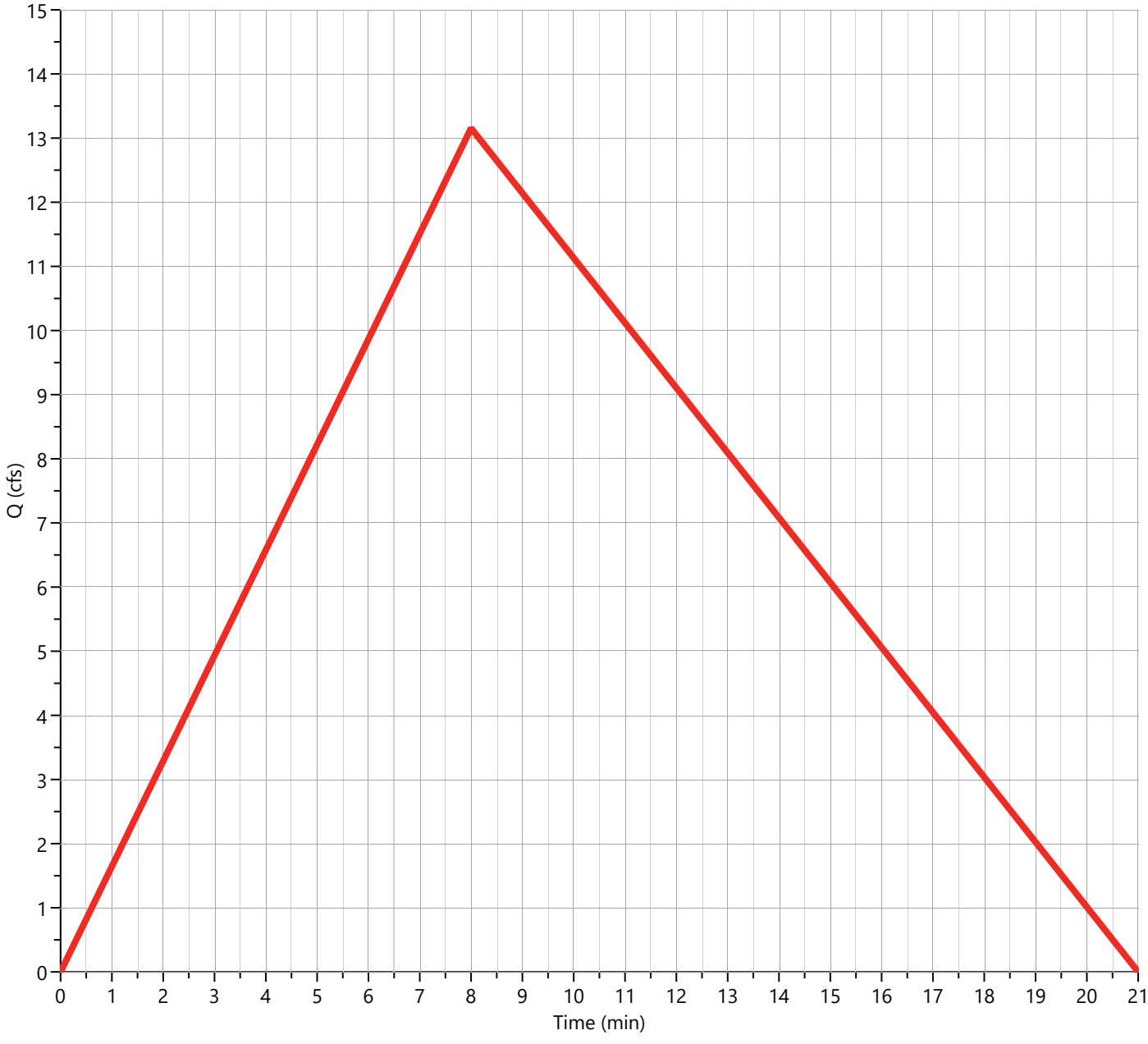
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 13.15 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 8,429 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.07 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

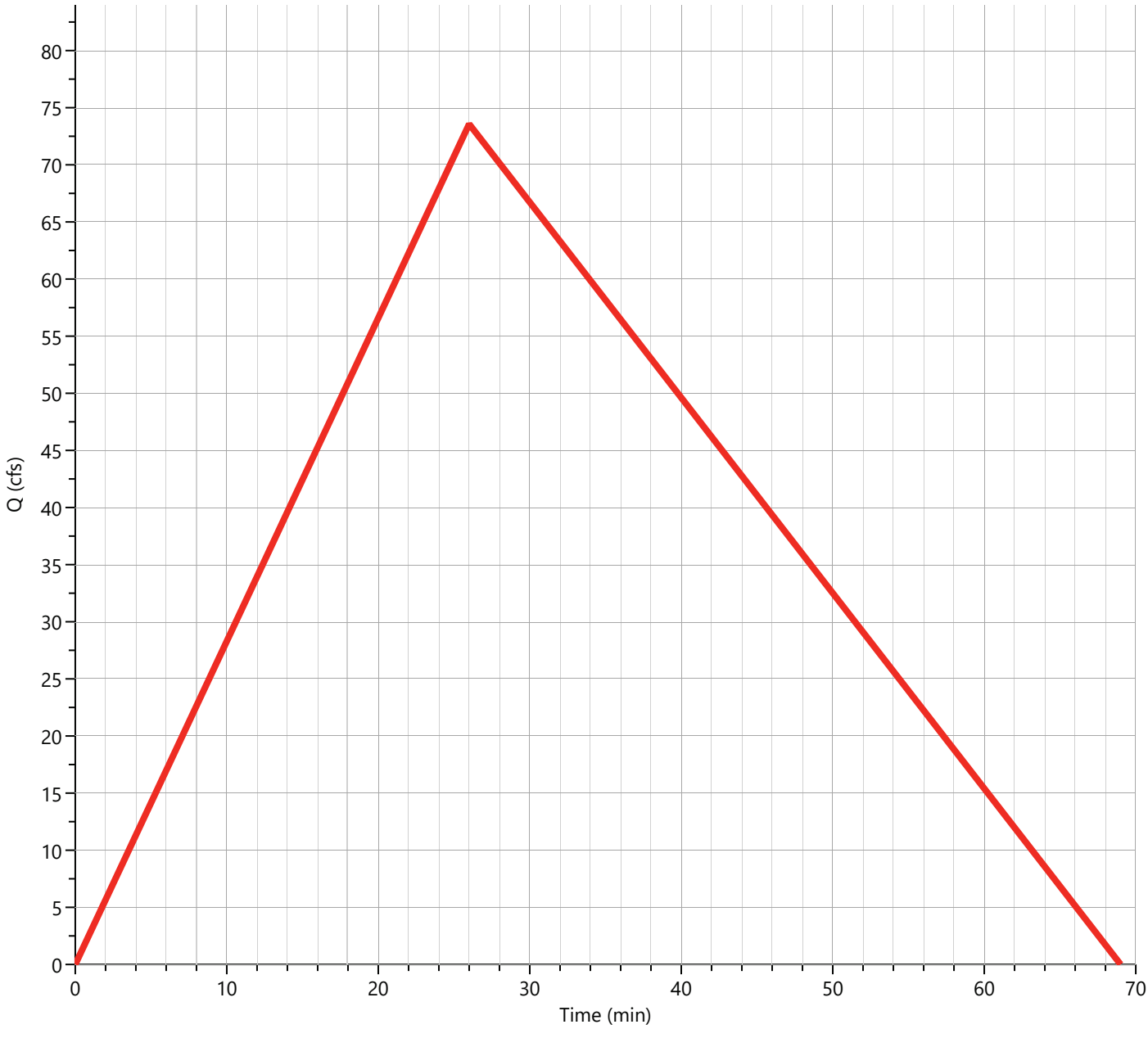
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 73.57 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.43 hrs
Time Interval	= 1 min	Runoff Volume	= 153,208 cuft
Drainage Area	= 18.36 ac	Runoff Coeff.	= 0.75
Tc Method	= User	Time of Conc. (Tc)	= 26.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

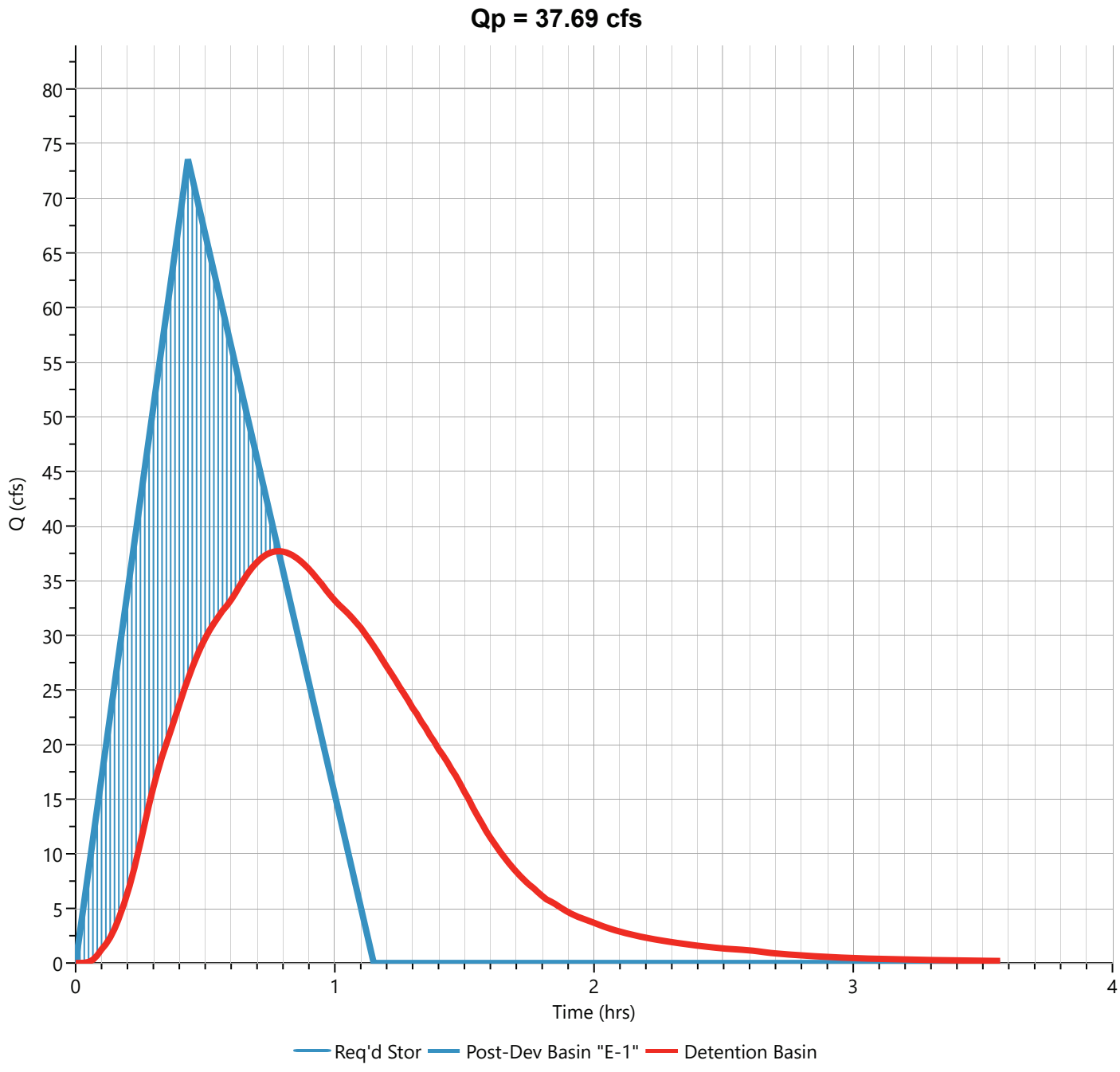
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 37.69 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 152,260 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 471.98 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 69,992 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 28 min



Hydrograph Report

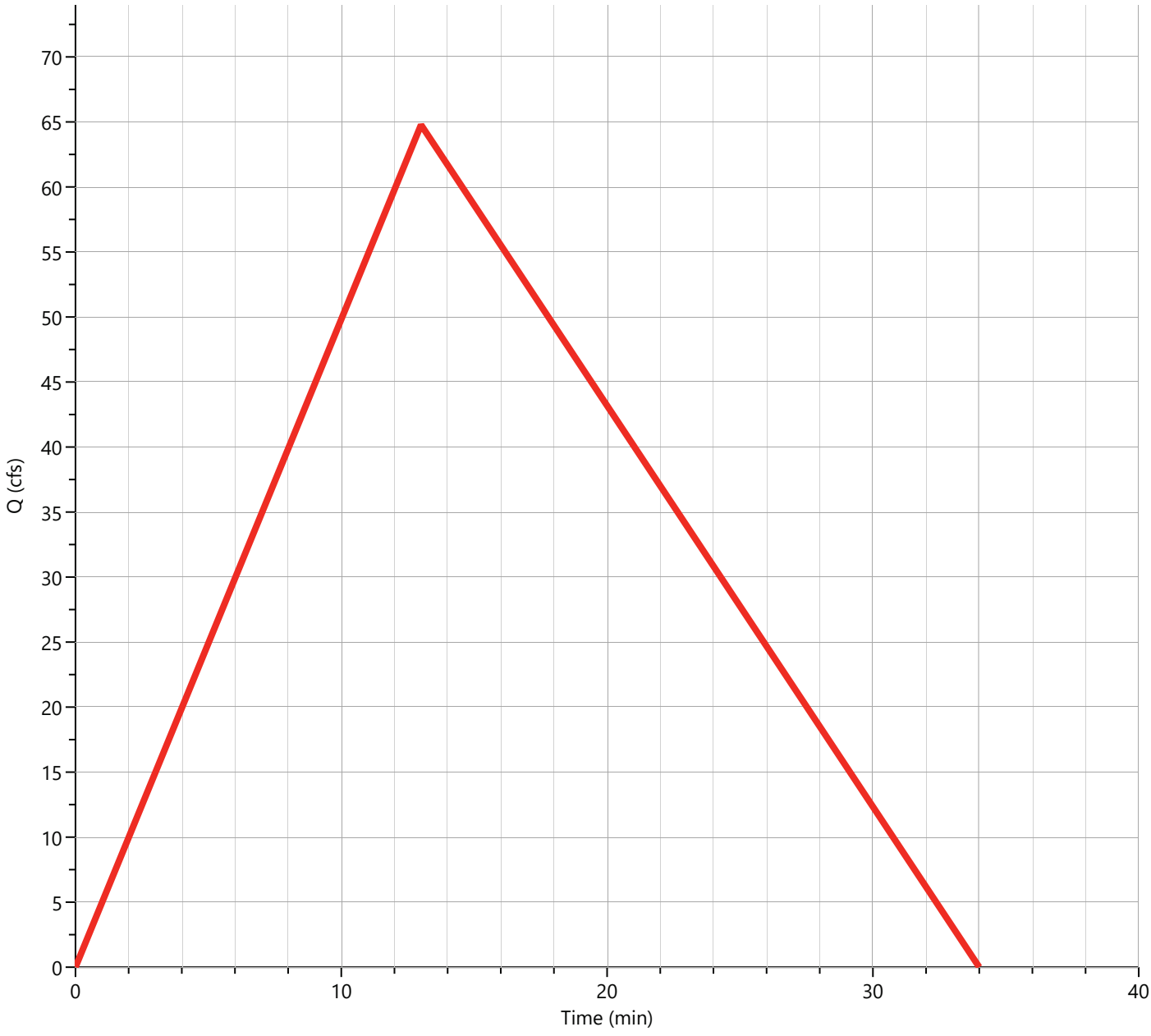
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 64.77 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 67,448 cuft
Drainage Area	= 15.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.29 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph Report

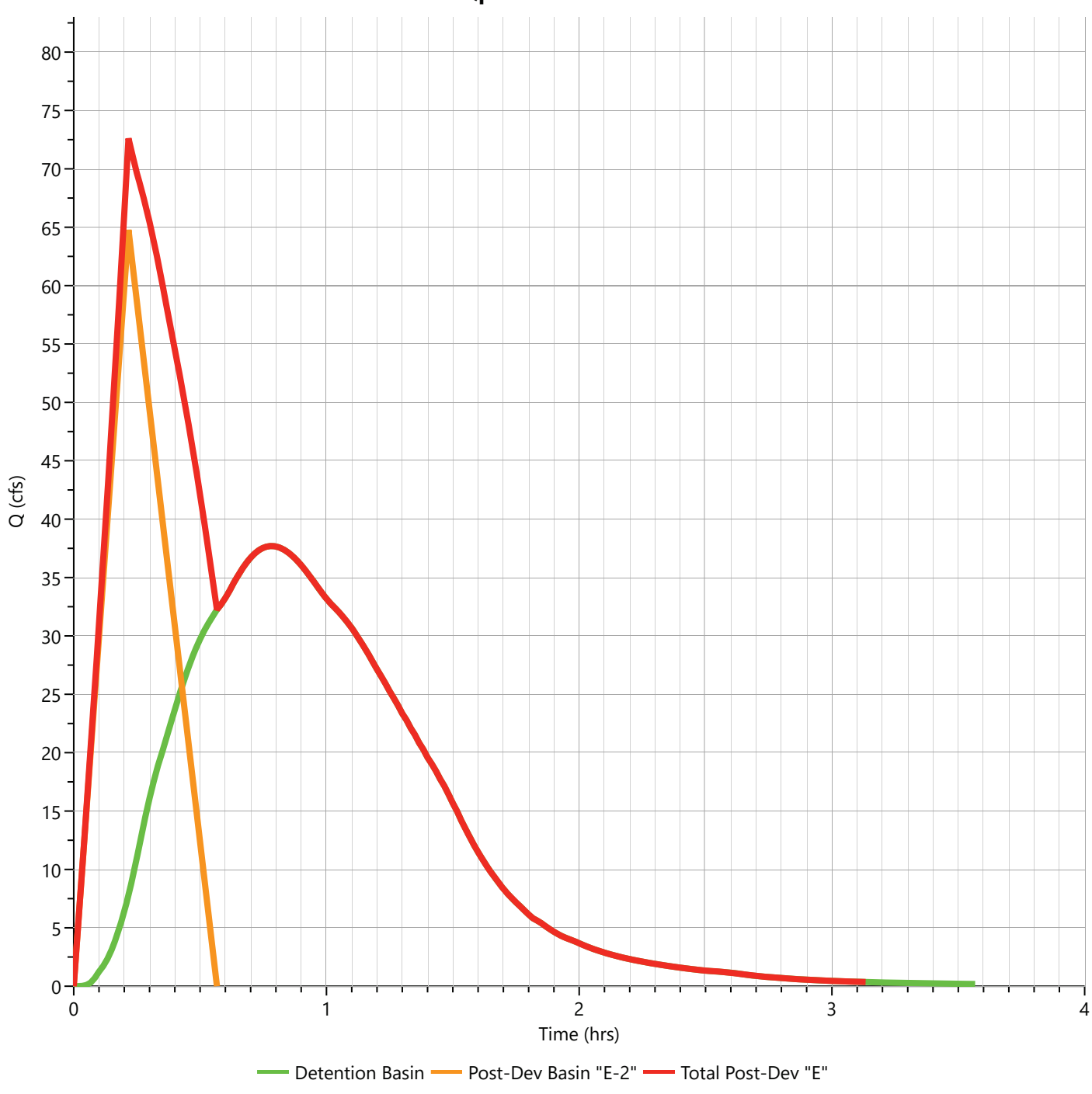
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Total Post-Dev "E"

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 72.60 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 218,328 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 15.86 ac



Hydrograph Report

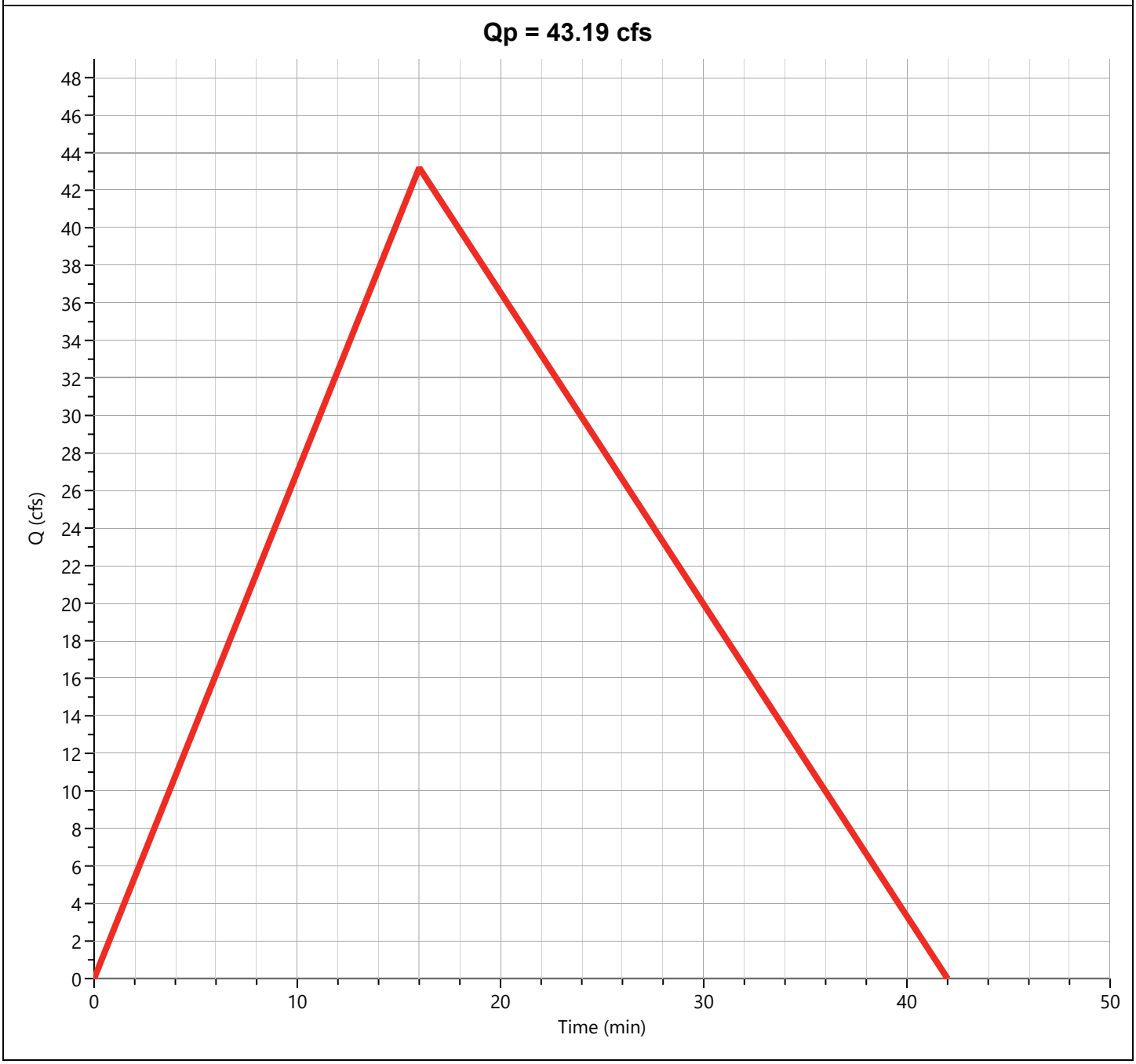
Hydrology Studio v 3.0.0.44

Project Name: Hilltop Subdivision
File: Detention Calculation 9-28-26.hys
09-29-2026

Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 43.19 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 55,359 cuft
Drainage Area	= 11.61 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Design Storm Report

Custom Storm filename:

Hydrology Studio v 3.0.0.44

09-29-2026

Storm Distribution: IDF Based - Synthetic, 6-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	✔ 100-yr	
6 hrs	0	5.32	0	6.37	7.21	8.30	9.12	9.85	

Incremental Rainfall Distribution, 100-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
2.50	0.033580	2.68	0.041135	2.87	0.060182	3.05	0.098636	3.23	0.047844
2.52	0.034090	2.70	0.042132	2.88	0.063778	3.07	0.085778	3.25	0.046360
2.53	0.034627	2.72	0.043212	2.90	0.068176	3.08	0.077126	3.27	0.045014
2.55	0.035192	2.73	0.044387	2.92	0.073733	3.10	0.070779	3.28	0.043787
2.57	0.035787	2.75	0.045671	2.93	0.081082	3.12	0.065859	3.30	0.042661
2.58	0.036417	2.77	0.047083	2.95	0.091485	3.13	0.061896	3.32	0.041624
2.60	0.037084	2.78	0.048647	2.97	0.107983	3.15	0.058612	3.33	0.040664
2.62	0.037792	2.80	0.050391	2.98	0.141026	3.17	0.055832	3.35	0.039772
2.63	0.038545	2.82	0.052356	**3.00**	**0.384499**	3.18	0.053436	3.37	0.038940
2.65	0.039349	2.83	0.054591	3.02	0.178836	3.20	0.051344	3.38	0.038162
2.67	0.040210	2.85	0.057167	3.03	0.120989	3.22	0.049495	3.40	0.037432

